True stories, well told.

CREATIVE NONFICTION

SCIENCE & RELIGION

Exploring the Harmonies

Plus: An encounter with Marilynne Robinson; fostering radical empathy; finding words to express the inexpressible; tiny truths; and more
A mini-magazine from the editors of Creative Nonfiction.

TRUE STORY

Big stories. Small size.
Delivered monthly.

www.creativenonfiction.org/true-story
From the Editor
LEE GUTKIND

What’s the Story?

I KNOW THAT EXPLORING the harmonies between science and religion is not the kind of subject your average literary magazine might focus on for an entire issue—and maybe that is why I am particularly excited about this issue of Creative Nonfiction.

Longtime readers may remember our 2014 “Telling Stories that Matter” issue, which featured essays coauthored by science-policy scholars and creative writers. That issue grew out of an innovative program called Think Write Publish (TWP) in which science-policy scholars and creative nonfiction writers worked together to write collaborative essays that turned the scholars’ research into creative nonfiction. In the process, the scholars taught the writers about the complicated process of designing policy, and the writers helped the scholars use narrative to communicate their ideas and work to a broader audience.

The program has gone through several iterations and has received funding from various sources, including the National Science Foundation, but its ongoing mission is to open new avenues of communication between experts and the public, who will be impacted by their ideas and achievements.

I have spent my whole professional life writing and teaching true stories—nonfiction narratives. I’ve written about robotics and medicine—narrative books about transplantation, pediatrics, veterinary medicine, and mental illness—and I’ve come to realize there is a lot about such crucial subjects that the general public does not—cannot—understand or appreciate unless scientists, engineers, physicians, policy professionals, and other experts communicate their expertise effectively. And, if you ask me, the most effective way to communicate is through story.

I created TWP with David Guston and Dan Sarewitz, two of my colleagues in the School for the Future of Innovation in Society at Arizona State University. It’s kind of a quirky name for a university school, but it pretty much captures SFIS’s broadest mission, which is to help our students envision and build the world they will want to inhabit.

Long before joining ASU, I had observed that creative writing programs traditionally focus on craft—story-writing technique—sometimes to the detriment of the content of the story, the reason for writing. Of course, craft is important; after all, it’s craft that separates creative nonfiction from . . . well, regular nonfiction. But sometimes I wish creative writing programs would focus equal attention on the substance of stories and encourage their students to tackle weightier subjects in greater depth.

Of course, any kind of writing brings challenges, and I don’t mean to suggest that what is more typically considered creative nonfiction—personal stories about family, hardship, disability, grief, discovery, living, and growing in a runaway world—is in any way light on substance. And of course creative nonfictionists do write about science—from astrophysics to genomics and everything in between. We write about religion, too, especially in the United States, where freedom to believe in and practice (or not to practice or believe in) whatever spiritual activity

Continued on Page 3
Between March 31 and August 28, 2017, the following individuals and organizations contributed to the Creative Nonfiction Foundation. Their generosity makes the magazine and CNF’s other publications and educational programs possible. We are tremendously grateful for their support.

Patrons
($100 or more)
Patricia Halverson

Fans
Diedre Badejo
Kathleen Cardwell
Elvira Casteel
Lennette Daniels
Mary Scherf
Norma Jo Wall

READERS
($50 or more)
Diana Humé George
Diann Martin
Laurie S. Moser

EDITORIAL ADVISORY BOARD
Diane Ackerman
Buzz Busunger
Edwidge Danticat
Annie Dillard
Dave Eggers
Jonathan Franzen
Tracy Kidder
Rick Moody
Susan Orlean
Francine Prose
Ruth Reichl
Richard Rodriguez
Rebecca Skloot
Gay Talese

WEB SUPPORT
ZAP Solutions

PRINTING
Broudy Printing

ABOUT THE ILLUSTRATIONS
ILENE WINN-LEDERER writes and illustrates books published under her imprint, Imaginarius Editions, including An Illumination of Blessings in 2014; a collection of annotated illustrations based on personal travel journals, Notes from London: Above & Below, in 2015; and Bestiary: An Imaginary Menagerie, published last year.

Ilene’s unique drawings and paintings are included in public and private collections throughout the United States and Europe, and her clients have included The Wall Street Journal, the New York Times, Children’s Television Workshop, Scholastic, Charlesbridge Publishers, and Simon & Schuster. Her website, www.MagicEyeGallery.com, showcases her books, original works, and custom giclée prints; she also offers twenty unique lines of custom-designed products based on her illustrations at Society6. She is a member of the Pittsburgh Society of Illustrators.
What’s the Story? Continued

we choose is a constitutional right that is cherished and sacred, though at the same time, often a source of tension and isolation. But the intersections of those two ways of understanding the world are rarely examined—and when they are, the primary narrative is one of conflict. As my colleague, Dan Sarewitz, a policy scholar, explains:

People come to know the world in part through stories, and many people know the story of Galileo being tossed into prison by the pope, or John Scopes going on trial in Tennessee for teaching evolution—not to mention Adam and Eve being kicked out of Eden simply for the sin of seeking knowledge. But stories are especially good at making sense of the ambiguities and contradictions of the human condition. So where and what are the stories that can communicate a more complex and even fruitful relationship between science and religion?

Generating such stories was the goal of this iteration of TWP, which was generously funded by the John Templeton Foundation. We offered fifteen two-year fellowships providing support—a series of free craft workshops and individual mentoring, plus opportunities to meet editors from some of the most thoughtful magazines in the country—for anyone with an important true story about the harmonies between science and religion. Many of those fellows’ essays will be published in journals and magazines over the next year, and others have inspired programming in science museums across the country.

The Templeton Foundation also provided generous prize money and support for an international essay contest, the winners of which are featured in this issue. Rachel Wilkinson’s engaging “Search History,” winner of the $10,000 best essay prize, explores the intersection of the Internet and our human questioning impulse. “[The Internet] is superhuman, beyond any one of us and inaccessible in its entirety,” Wilkinson observes. “Like an oracle, Google can access and interpret the world beyond, though it is still essentially of this one.”

Other essays explore intersections of Mormonism and astronomy, Judaism and physics, and grief as the ultimate proving ground for both science and religion. Somewhat unusually for a literary magazine of this size, we were also able to commission work for this issue. We sent Dinty W. Moore on a post-election tour through southern Ohio, Western Pennsylvania, and West Virginia to see how science and religion coexist in everyday life for “ordinary Americans.” And William Wan, recently appointed the Washington Post’s science correspondent (and formerly its religion correspondent), reflects on his seemingly unlikely career path and discovers room for awe in both fields.

Some of these essays are being published simultaneously here and in Issues in Science and Technology, which doesn’t often feature narratives. And, to me, the joint publication of the same essays in two entirely different publications with very different readerships is in many ways the most important and exciting part of the project. I hope and believe that these complex and nuanced true stories reveal something new and might inspire you to see the world in a different way. And, above all, I hope the work in this issue will expand awareness and appreciation of the vital roles of both science and religion—no matter where or how (or whether) you worship and what you believe or don’t believe.
CONTENTS

From the Editor

1  WHAT’S THE STORY?

Then & Now

6  GETTING OUTSIDE OURSELVES
Sherrie Flick
How looking up from the screen and going for a walk may save us all

Encounter

10  THIS ESSENTIALLY MEANINGLESS CONFLICT
Marilynne Robinson explains how silly it would be to imagine science (real science, anyway) and religion are at odds

Between the Lines

16  IN THE BEGINNING WAS THE WORD
Sonja Livingston
Is it possible to write about faith without using the word God?

Essays

20  SCIENCE & RELIGION
Exploring the harmonies
Under the Umbrella

KINDRED SPIRITS

Spiritual writing requires exactly the sort of reflective seeking that’s a hallmark of all creative nonfiction. Jonathan Callard and Jessica Mesman Griffith offer tools and insights for crafting stories that are both personal and powerful.

Writers at Work

THE FINE LINE BETWEEN BEING ALONE AND BEING LONELY

Writing requires solitude … or does it? Rachel Mabe flees the seclusion of a coveted residency, and Cynthia D. Bertelsen learns to embrace the isolation of the writing life.

Exploring the Boundaries

TRYING TO CONCEIVE

Bethany Marcel

Do you have to believe in the line on a home pregnancy test to see it?

AfterWords

TINY TRUTHS

A collection of Twitter micro-essays
Our faces are buried, and I don’t mean in the sand. They’re snuggled into our machines these days as we scroll and click and finger type away. We travel into virtual lands, disconnecting from the three-dimensional one around us. I worry that we’re no longer able to walk in this world and communicate with each other one-on-one. I worry that we no longer understand how to be alone. And being alone and lonely and bored is important to us as creative people.

Henry David Thoreau wrote: “How vain it is to sit down to write when you have not stood up to live!” (Of course, he had his mother do his laundry for him while living on Walden Pond, so we have to take the simplicity of his enthusiasm with a bit of an eye squint.)

Standing up to live can be difficult. It takes time and energy and an ability to see beyond ourselves. An essential part of the process is cultivating empathy. Only through living outside of ourselves can we be at our best as writers, whose job is to capture and translate humans, creatures, and details of the lived world onto the page.

As a writer you must transform language and yourself. This personal, internal transformation is as crucial to your work as is the actual writing of words.
Let’s look at the simple act of walking as the first means of transformation. It was Stanford professor Daniel Schwartz’s habit to walk around campus with his mentees as they discussed projects. And, as one of those mentees, Dr. Marily Oppezzo, put it, “One day we got kind of meta.” In 2014 the pair published a groundbreaking set of studies that look, possibly for the first time, at the connection between walking and creativity.


She noted that in one of the studies, participants were given the words button, tire, and newspaper and allotted four minutes to be creative with them. Then, one-third of the group walked on a treadmill for four minutes while brainstorming, another group walked for four minutes then sat and brainstormed, and the third group sat still for four minutes before trying the task again. The people who walked or walked and sat doubled their capacity to creatively brainstorm. Oppezzo suspects walking helps dampen down the filter that normally tells our brains “that’s not worth thinking about.”

The findings show that walking helps specifically with brainstorming, with creativity. A surprising aspect of the results was that participants could walk on the worst treadmill, staring at a blank wall, and something good still happened in their brains. The expanded creativity from the four-minute walk continued for eight minutes after each walking session.

Ferris Jabr’s September 2014 New Yorker article, “Why Walking Helps Us Think,” examines how strolling helps our state of mind: “Walking at our own pace creates an unadulterated feedback loop between the rhythm of our bodies and our mental state that we cannot experience as easily when we’re jogging at the gym, steering a car, biking, or during any other kind of locomotion.”

Researchers have begun to take an interest in where people walk, as well. For example, studies suggest that a walk in green space can replenish brain power that human-made environments deplete. Jabr notes that “psychologists have learned that attention is a limited resource that continually drains throughout the day.” Being in nature replenishes our ability to perceive, to participate. It helps us connect.

Of course, before psychologists realized this, writers knew it. Annie Dillard and Wendell Berry. Even Jack Kerouac, in his rambling way:

I felt like lying down by the side of the trail and remembering it all. The woods do that to you, they always look familiar, long lost, like the face of a long-dead relative, like an old dream, like a piece of forgotten song drifting across the water, most of all like golden eternities of past childhood or past manhood and all the living and the dying and the heartbeat that went on a million years ago and the clouds as they pass overhead seem to testify (by their own lonesome familiarity) to this feeling.

(The Dharma Bums)

A study published in 2015 by Gregory Bratman at Stanford University shows that there is something to walking in an untamed environment. It wards off “rumination,” which is a specific psychological term that means our tendency to dwell on negative, self-referential thoughts in a circular, obsessive fashion.

Bratman’s study focused on city dwellers. Half the participants walked for ninety minutes through a “grassland with scattered oaks and native shrubs. . . . Views include[d] neighboring, scenic hills, and distant views of the San Francisco Bay.” The other half walked El Camino Real, a wide, traffic-clogged street in Palo Alto.

The nature walkers reported less rumination, and their brains showed increased activity. The urban walkers showed no such improvements.

Walking in nature hasn’t been scientifically connected to increased creativity, but instead to better well-being. For me, walking in nature that I don’t yet understand—the High Plains of Wyoming, the Florida Keys, the Ozarks—has helped my own observation skills and opened up my imagination.

It’s a great argument for writing residencies or visiting state or national parks. And, of course, this is what the Romantic poets were shooting for all along: imagination, nature. It was nothing for William Wordsworth and his sister Dorothy to walk twelve miles in a day.

As Rebecca Solnit notes in Wanderlust: A History of Walking, the Romantics are often credited with making walking a cultural act. Partly, that has to do with the fact that, as easier transportation and better infrastructure arose in the late eighteenth century and people were no longer forced to walk, they could choose to walk. Thus, the idea of taking a walk for walking’s sake was born. English essayist Thomas de Quincey wrote:

I calculate, upon good data, that with these identical legs Wordsworth must have traversed a distance of 175,000 to 180,000 English miles—a mode of exertion which, to him, stood in the stead of alcohol and other stimulants whatsoever to animal spirits; to which, indeed, he was indebted for a life of unclouded happiness, and we for much of what is most excellent in his writings.
Of course, William incorporated the act of walking into his work. In “Sweet Was the Walk,” he evokes the pleasures of a mid-day stroll:

_Sweet was the walk along the narrow lane_  
_At noon, the bank and hedge-rows all the way_  
_Shagged with wild pale green tufts of fragrant hay,_  
_Caught by the hawthorns from the loaded wain,_  
_Which Age with many a slow stoop strove to gain; . . ._

And his sister, Dorothy, detailed many exhilarating walks with her brother in her journals. In October 1800,

_There was a most lovely combination at the head of the vale—of the yellow autumnal hills wrapped in sunshine, and overhung with partial mists, the green and yellow trees and the snow-topped mountains. It was a most heavenly morning._

Many writers also find release walking through cityscapes. Walt Whitman is always walking through the city. “Brooklyn of ample hills was mine,” he tells us of his walks, and “I too walk’d the streets of Manhattan island, and bathed in the waters around it.” Baudelaire walked through Paris, conceptualizing the _flâneur_, the wanderer, connoisseur of the street.

Virginia Woolf made up _To the Light-house_ while walking through Tavistock Square, and _Mrs. Dalloway_ is all about walking, which literally connects the characters. (There is a London tour you can take that follows Woolf’s walks, based on notes she wrote in her journals.) Joyce is Dublin; Ben Lerner’s dense prose merges him as a character with the living, breathing city around him.

Too, walking through places with people in them makes us imagine the experiences of others in a way walking through nature doesn’t. The writer Jolene McIlwain told me of an exercise that she tried a few years ago. She set one simple goal: to make eye contact with one person involved in the altercation every time she saw a domestic dispute. But, she told me, the exercise changed her. She started to see things from another point of view, a view with which she radically disagreed.

_Prior to making a conscious effort to meet their eyes, I would always look away from those situations, and I told myself it was because I didn’t want to judge or didn’t want a confrontation. But really it was more about wanting to write my own narrative. If I opened up my eyes (my brain and my heart) I’d have to accept that there were other parallel narratives that could be happening._

She says she soon saw a connection with her own drafting process.

_I get the action down and then it takes me multiple drafts to unpack the feelings behind those actions, the narrative behind the actions. And sometimes if I get the actions and thoughts down, I don’t linger there long enough. It’s like I’m at the store, I see the fight start, I observe for a few milliseconds, then I duck into the next aisle and act like I’m looking for Advil._

In this empathy exercise, McIlwain learned that she needed to make eye contact and hold it until another person saw her seeing them. She needed to get to a place where she felt uncomfortable and challenged and—for lack of a better word—_alive_. And then she needed to take that same feeling into her writing.

Hungarian psychologist Mihaly Csikszentmihalyi notes:

_The best moments in our lives . . . are not the passive, receptive, relaxing times . . ._.

The best moments usually occur when a person’s body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile.

He calls this state of being flow.

For a story to be great, Stephen King says, it must have two elements: drama and empathy. It’s important to remember empathy is not about judging; it’s about observing without prejudice. It isn’t sympathy. Sympathy is feeling sad that Bambi’s mother is killed by the bad hunters. Empathy is trying to understand the motives and feelings of the hunters and the doe and Bambi himself as the scene unfolds.

Empathy can be cultivated. In _H Is for Hawk_, Helen Macdonald recounts how training a goshawk helped her overcome intense grief at the sudden death of her father. In part, she survives by losing herself in the hawk. She felt in some ways that she became the hawk:

_I started to see the city through [Mabel’s] eyes . . . I would come out and stare at what was going on and it would baffle me. I’d wonder what a bus was. Why is that woman throwing a ball for her dog—why would you do that? The whole city became very odd. Later, when the hawk began to fly free and hunt her own food, I really felt that I wasn’t a person anymore . . . I became this feral creature covered in mud and blood and thorn scratches. I didn’t wash my hair. I was a mess, but it was an incredibly good way of forgetting that I was miserable._

—Electric Literature interview.

First, though, Macdonald had to be open to that empathy and to understanding and analyzing it. “It’s what the poet Wordsworth would have called joy—joy and wonder. That’s at the heart of what I love about the natural world. If you’re receptive to it,
it does something to human minds that nothing else can do.”

People practice deep empathy in surprising ways. The immersive writer and performance artist Thomas Thwaites tried to turn himself into an animal.

As Joshua Rothman tells the story in the *New Yorker*, in 2013 Thwaites “was semi-employed and living with his dad.” He thought about how much simpler it would be to be an animal. He got a grant and headed off to determine what animal he would like to become. After dismissing many options—including elephants because they were too smart, big, and strong—he visited a shaman. There, Thwaites remembered that as a child he had tried to eat a houseplant.

The shaman told him that in a cave in France, there was a thirty-thousand-year-old painting of a human-bison hybrid. But he eventually settled on a goat. As Thwaites writes in *GoatMan: How I Took a Holiday from Being Human*: “Really, to want to become a goat is pretty standard. In fact, historically speaking, it’s almost odder to not want to become a goat.”

Thwaites began reading Heidegger and became convinced that to really live the life of a goat, he would need to goatishly interact with the world around him. He had prostheses built so he could walk on all fours, and he decided to eat grass—though since humans can’t digest grass, he stewed it over a campfire with a pressure cooker at night after chewing it and spitting it into a receptacle during the day.

As Thwaites began to eat the grass, he noticed “the subtleties of the different types of grass: the blue-green patches of grass are bitter, whereas the greener-green grass is sweet and much preferable.” He was a goat for three days. Even during such a brief immersion, he started to forget himself. He hung out with the other goats. They all did some sniffing. Apparently goat No. 18 took a shine to him. The goat farmer believed Thwaites was “accepted by the herd.”

Leo Tolstoy and James Joyce and Mary Oliver and Percival Everett. All to a greater or lesser degree tried to get into what an animal is—its essence—in order to explore greater emotional complexities of humans. Writers live on the streets or take on different occupations or ride along in police cars so they can experience the world from a new perspective—be changed—and then relay that emotional and physical experience onto the page.

In 1931, the Brazilian architect and artist Flávio de Carvalho donned a green velvet hat and walked against the flow of a Corpus Christi procession in São Paulo. It was a kind of wandering with purpose, which caused an uproar because the crowd perceived the hat-wearing, upstream act as irreverent. He called it “Experiencia N.2”—simultaneously a performance and a sacrilegious revolutionary act.

What he did—walking against the flow of people while wearing a forbidden hat—became something larger. His provocative multi-disciplinary art projects created a conversation with other Brazilian artists interested in creative revolutionary acts. Together they became the Brazilian modern movement and influenced group art actions in Brazil and the United States.

More recently, a student named Emma Sulkowicz carried her mattress around Columbia University in 2014 and 2015. The action, which she called “Mattress Performance (Carry That Weight),” served as her senior thesis and as a protest against rape on campus. It stemmed from what Sulkowicz alleges was her own rape by a fellow student, whom a university disciplinary panel ultimately declared “not responsible.” Her walking with her mattress created a kind of extended empathy, something that expanded beyond her to greater issues. The act itself seems mundane, but when put into a context is charged and draws in others who feel oppressed or harmed in a similar way. The act became contagious: other students joined in the effort by helping Sulkowicz carry her mattress, and students carried mattresses across campuses nationwide in solidarity.

We can see this same sort of extended empathy with the Black Lives Matter movement when groups of people put their hands up in a “don’t shoot” gesture. It’s a simple physical movement, but when put into the context of our time it becomes charged and opens up physical expression. When others repeat it, they feel the moment of the falsely accused, as well as the existence of the revolutionary movement.

As large groups not connected to a specific inciting event become infected by the event, a kind of contagious empathy arises, and a larger understanding of what it means to be human right now forms.

It’s our job as writers to mine such moments and events for meaning and cultural context. It’s our job to radically empathize with these symbolic gestures and understand them better than the next person.

As we do this, our empathy becomes more sophisticated and more effective, and it’s contagious, too—it spreads to our readers. It’s a circular phenomenon. We need to practice empathizing in order to understand empathy in order to write so that our readers experience empathy on the page. It can’t be imitated. It needs to be experienced and practiced, physically, like walking. It’s all connected.

We need to walk around in and observe and reflect and write about the world around us. Let’s become the *flâneurs* of our time. In doing so we will redefine our creative process, inside and out. It is time to put down our phones and cultivate a fresh new creativity that involves the body, the mind, and—only then—our computer keyboards.
MARILYNNE ROBINSON’s accomplishments are impressive by any standard: she has won the National Book Critics Circle Award for Fiction, the Pulitzer Prize for Fiction, and the National Humanities Medal, among other honors. But perhaps a better measure of her eminence as a writer and thinker for our times is this: When the *New York Review of Books* ran an extended interview with Robinson in November 2015, her interviewer was … President Obama.

Robinson’s fiction and essays display a combination of fierce intelligence and profound human empathy. Her four novels are at once gorgeous, revelatory, and lapidary; her essays, ruthlessly clear and often deeply challenging. At the heart of her work is her Christianity, and from there she explores everything from the prospects for democracy to the role and limits of science in our lives. She is equally comfortable, eloquent, and convincing in discussions of cosmology and the power of the sermon, and she celebrates both science and faith as expressions of our humanity.

We interviewed Robinson via e-mail, and our questions referred specifically to three of her works: her 2004 Pulitzer Prize-winning novel, *Gilead*, narrated...
by the elderly preacher John Ames, and the essays “Proofs” and “Humanism,” from her 2015 collection, *The Givenness of Things*. Her responses, which offer only a glimpse of the warm and penetrating brilliance of her thinking and writing, highlight a perspective that we wish were more broadly available in efforts to explore the interactions and intersections of science and religion. If, she suggests, one views science as a skeptical, questioning mode of inquiry “whose terms and methods can overturn the assumptions of inquirers,” then it can be neither a threat nor an alternative to religion. After all, there are no possible scientific tests for the reality of soul, self, or God. She holds science to a strong standard of integrity while insisting that the concepts of science “are beautiful in their own right.” This rigorous and generous way of understanding things points the way toward a harmony that is both intellectually and emotionally satisfying.

—Lee Gutkind and Dan Sarewitz

LEE GUTKIND is the founding editor of Creative Nonfiction, and DAN SAREWITZ is the editor of Issues in Science and Technology. They are both professors in the School for the Future of Innovation in Society at Arizona State University.
Early science was fascinated with the wonderful capacities of the mind and the wonderful order it discovered in nature. Both of these were seen as God’s providence.
Writing True Stories That Matter

TURNING RESEARCH INTO NARRATIVE THROUGH CREATIVE NONFICTION

A unique, graduate-level writing workshop at Arizona State University's Washington DC Center, Writing True Stories That Matter is taught by Lee Gutkind, the “Godfather” behind the creative nonfiction genre (Vanity Fair) and founding editor of Creative Nonfiction and True Story magazines.

For Researchers, Policy Wonks, Grant Applicants, Program Managers, Aspiring Politicians, Decision Makers, and Writers:
Everyone needs a story to communicate ideas to diverse audiences.

Writing True Stories That Matter will help you transform information into compelling nonfiction narratives. The skills developed in this class will be applicable to all forms of nonfiction, from long-form journalism, op-ed pieces, and speech-writing to book proposals, grant applications, and white papers.

Writing True Stories That Matter is designed for busy individuals. You will draft and revise a long-form narrative essay, book chapter, or series of smaller pieces as a final product to earn class credit. The class meets every other week on Thursday and Friday evenings from 6:00 to 9:00 PM, January 11 to April 27, 2018.

For more information and to register for Writing True Stories That Matter visit: cspo.org/program/true-stories/

ASU School for the Future of Innovation in Society
Arizona State University
CNF: In reading Gilead from a science-and-religion perspective, it’s hard not to get this sense that science was deliberately banished from your telling of John Ames’s life—that Gilead is in part a thought experiment to show that the principal (or highest?) meaning that one can derive from and in life must flow from the sorts of moral and existential reflection that religion allows and sustains—and that science does not. Is religion a more essential foundation for human wisdom and psychological flourishing than science?

ROBINSON: Ames is writing in 1956. Science then was a very different thing. He would have known as much about it as any intellectually curious reader, but much he knew would be superseded by now. I didn’t want to involve myself in anachronism, and I didn’t want him to appear naive, when, by the standards of his time, he would not have been.

CNF: Pursuing this idea a bit further, in “Humanism,” you also offer a scalding critique of neuroscience, which you portray as founded on denial of the one thing that we all know to be true—that our individual, subjective selves actually do exist. Your critique would seem to suggest, then, that in being based on an ideological fallacy, neuroscience’s capacity for catalyzing false beliefs is much greater than its promise for yielding lasting insight. Is that a fair reading of your position? What are the implications of your critique of neuroscience for the scientific ideal of freedom of inquiry?
ROBINSON: Neuroscience will do what it will do, and should be willing to stand up to considered criticism of its methods and conclusions. If it makes a better account of itself in future than it has done to this point, excellent. Freedom of inquiry has never meant a loss of the same freedom by people who find a project questionable. I’m surprised to find such a thing suggested in a scientific context. I mention Dawkins because he is an especially voluble instance of the fact that this worldview—and I am not speaking of atheism here, but of the whole rattletrap machinery of his and their particular school of thought—is presented as Indubitable Truth. It is a bad model of science and reasoning. It makes the kinds of claims that surely exist to be tested. You use the word “ideological,” which is striking. Is it ever appropriate for science to be ideological? That may be a part of my unease. Sciences that undercut individuality, like racial science and eugenics, rationalize inhumane ideologies, which in turn support them politically. That said, my criticisms always address their methods and reasoning, areas where opinion or ideology can be put aside.

CNF: In Gilead, John Ames seems to espouse many opinions similar to arguments you have made in lectures and essays. Stylistically, however, your fiction and essays are quite different. Do fiction and essays serve different purposes for you in exploring such matters as science and religion? Do you approach them very differently, as a writer? Do you aim them at different audiences?

ROBINSON: I don’t really think about an audience for my fiction. My essays are all lectures, so they are written with the audience in mind that I expect at some particular occasion.

CNF: John Ames’s moral, intellectual, and spiritual inner lives are so richly realized. Do you see fiction as uniquely suited to deeply probing this sort of inner subjective reality? Does fiction—with its suspension of disbelief—make the issues you want to explore somehow more accessible to skeptical or secular readers than can be accomplished through nonfiction?

ROBINSON: Writing is a very interior experience for me. I’m very happy to have secular readers, but I don’t think about making the work accessible to them or to anyone else.

CNF: Above all, your characters are tremendously human; they grapple with faith, but more generally with making complex, difficult decisions. Is this what it means to be human? And is the role we assign to science in religion is understood to be the soul. Referring back to your view of neuroscience, does this mean that art itself cannot escape conflict with science, in some ways?

ROBINSON: Again, that distinction—no real science offers a judgment about the reality of the human qualities traditionally called the soul. So long as an ideological neuroscience inserts itself into these questions, art and everything we call humanist will be caught up in this essentially meaningless conflict.

Real science is a spectacular achievement, a great demonstration of brilliance that should help us to value and celebrate humankind.
HEAR THE WORD, of course. I go to Mass some Sundays, listen to Al Green’s Greatest Gospel Hits, and have lived in or near the Bible Belt for the better part of the past decade. Even still, the word God has never quite fitted itself to my ears. And when I’m called upon to say it, I get shifty-eyed and spastic. I smile hard and mutter other words—spirit or goodness—anything but the word God, which sits like a fistful of rubber bands in my mouth.

God bless you, people say, and unless I’ve sneezed, I’m at a loss.

I visited my friend Mary this summer. A ninety-six-year-old church lady adorned with more medals of the saints than I can count, Mary’s been an ardent and unlikely guide as I’ve made my way back to Catholicism. She’d just moved into a nursing
home, and she showed me around—the cafeteria, the sunroom with plant stands and floral padded wicker chairs, the chapel with statues of Mary and Jesus flanking the altar. “Go up and say hello,” she said. The chapel was small, with nowhere to hide, and my attempt to change the subject did not work. “Go on and touch them,” she said. “Show them that you’re here, and you care.”

Well, I was there and did care, but setting my hands against the plaster robes embarrassed me somehow, made me feel exposed and inauthentic. Which is precisely how I feel when I attempt to use the word God.

This is not a big problem in and of itself. We have freedom when it comes to language. If we don’t like a word, we don’t usually have to use it. Writers can be persnickety about such matters and keep running tallies of objectionable words in their heads. For years, I simply lumped the word God in with cerulean and staccato and moved on.

The trouble began a year ago when I returned to Catholicism. I was as surprised as anyone else to find myself surrounded by stained glass and the Stations of the Cross. I’d left in my mid-twenties, no longer able to square the Church’s teachings on everything from limited roles for women to birth control with my own experiences and values. Why had I come back? Intellectually and politically, the action made no sense. I tried to untangle the question in writing, which is the best way I know to do my untangling. But how to fully delve into the matter when I could not bring myself to use the word God?

II.

Devout Jews do not utter the God of Israel’s name. They say the Holy One or HaShem (literally, The Name). Adonai (Lord) is almost always substituted in prayer. Even in writing, The Name must be handled with care. Hyphens are inserted (G-d), or they use the tetragrammaton (the four Hebrew letters transliterated as YHWH, which many Christians pronounce Yahweh).

Even among some Catholics, there’s an awareness of the limitations of language where God is concerned. St. Anselm said: God is that, the greater than which cannot be conceived.

St. Augustine said: God is not what you imagine or what you think you understand. If you understand, you have failed.

The theologian Karl Rahner did not like to use the word God. He preferred to use Absolute Mystery instead, saying: God’s silence, the eerie stillness, is filled by the Word without words, by Him who is above all names . . .

III.

It’s possible my problem is sociological. I grew up among people who did not reveal their tenderness. We went to Mass, yes. We fell in love and exercised the soft tissue of our hearts as best as we could, but to leave ourselves so open as to enthusiastically believe? That was madness.

But that doesn’t entirely explain it. I have, despite it all, developed a proclivity toward softness. I’ve learned to say words like honey and sweetness, to like them, and to mean them.

The larger problem is that, though I was only a child, I never expected words to be even exchanges for truth. That the world was wondrous, I could almost let myself believe, but religious language seemed to trap wonder in cardboard boxes. I still remember the day I quizzed people after Mass about the virgin birth, the way they clung to the story no matter how I battered them with questions. How disappointed I was to discover we’d spoken words with the same shape and sound, but understood so little of each other. How alone I suddenly felt. It was bad enough to be a kid from the family that got food baskets every Christmas, but now it seemed I was alone in adoring the Blessed Mother whether or not she’d ever given herself over to a man.

My misgivings did not keep me from church. I went eagerly and as often as I could. I loved what I found there, even if I could not name it, so I learned to make do. For as far back as I can remember, when anyone said God, I simply added an o in my head and made the word God into good.

God is good, someone will sometimes say at church, and it’s the one time I nod and smile and do not feel false.

IV.

But the word Good is not related to the word God. They have entirely different roots. Good comes from Old English (gōd), is cousin to gather and —gether, and derives from the Proto-Germanic (gōdaz) and the Proto-Indo-European (ghedh), which mean to unite, be associated, to suit, or to fit.

No one agrees on the origin of the word God. Used as both a proper noun for the supreme being and more generally to designate a deity—large. Various theories have the Old English word rooted in the Proto-Indo-European words for to invoke, or to pour (as in libations or earth), or the one to whom we make sacrifice.

God is perhaps uttered most as a secular exclamation. God damn it, a father shouts as his truck slides into a frozen ditch. My god, the lover murmurs as she bites the inside of her lip. God, no, the wife sobs as the surgeon emerges with a haunted look on his face. OMG, the student says, and we all LOL.
Beth Ann Fennelly, Poet Laureate of Mississippi, combines the compression of poetry with the truth-telling of nonfiction into one heartfelt, celebratory book.

“Fennelly brings a poet’s sensibility to Heating & Cooling. Each entry is … a perfect pearl of memory.” —Ann Patchett

www.hmu.edu

Distance Learning University

Graduate Education in the Humanities
The word God springs from the gut in such cases. It’s the last sound we make as we move toward speechlessness, the drop-off point to the vast ocean where language has no jurisdiction.

V.

What we feel most, the poet Jack Gilbert wrote, has no name.

In the meantime, the word God falls millions of times a day from our collective mouths, though there’s no real sense of what we’re talking about. To some, God is an omnipotent guardian with a heap of white curls riding shotgun on clouds. To others, she’s the green breath of trees.

VI.

“Do you believe in God?” The editor was trying to decide whether to take on my work. I’d started writing Catholic essays, which meant visits to shrines and churches, discussions with priests and pilgrims, and this editor was the only one who came right out and asked. I couldn’t decide if the question was brave or rude. The piece we were discussing was steeped in religion, so I suppose I’d opened the door.

“Do you believe in God?”

She may as well have asked if I believe in the scent of gardenias wafting around my neighborhood on humid evenings, the slow groan of their oily petals, the throb of cicadas, or the word belief itself.

VII.

Allah is nearer to man than his jugular vein.

—THE QUR’ÁN (50:16)

So near we approach the place where words have no business. Or have important business if we learn to use them in new ways. Some words get closer than others. Verbs do better than nouns. Metaphors come closer still. But even then, in the face of such immensity, we are children throwing pebbles at the sky.

VIII.

But writers broker the world in words, so what else can we do but try?

Every semester I share the quote often attributed to Chekhov: Don’t tell me the moon is shining; show me the glint of light on broken glass. We talk about showing and telling and move on to concrete language. I give students a prompt, asking them to translate a series of abstract words (beauty, greed, poverty) into concrete images (black feather on snow, two-timing ex-boyfriend, the bottle and can collector on East Main Street). I sometimes add God to the list, because God seems to me the ultimate abstraction. And yet our work as artists—whether we identify as believers or not—is not only to show the light on broken glass, but also to try to touch the thing that gives the moon its light, the source of luminosity itself. What an impossible and lovely proposition—to attempt to build bridges of words to reach the mysterious and necessary expanse where language cannot join us.

IX.

That name—my conception of Him—extended to me a hand that led to a place where even His divine name could not exist.

—TERESA OF ÁVILA

X.

In the end, I told the editor about adding the o to God.

“I believe in goodness,” I said. And though I meant it, I heard only the clumsiness of words and how little we’d managed to say.

I should have told her about the sheep sprawling on green hillsides on the Isle of Iona in Scotland, surrounded by mossy old stones and the blue of the sea. The way they sink into the grasses—the lambs, the overgrown ewes, and a few cows—any doubt they’re cradled by the earth itself never once crossing their woolly heads.

I should have told her about the old men in Seville. The way they sat beside each other in a café where anyone foolish enough to be caught in the midday heat had taken refuge. One sat in his wheelchair, the other in a café chair. They sat so close, their birdlike heads nearly touched. Outside, the sun scorched and blinded. Inside, the men ordered ice cream. One lifted the spoon and brought it to the other’s mouth. They glowed, those men, and laughed with pure delight—one for the taste of ice cream, the other for the pleasure of lifting the spoon, again and again, to his friend’s mouth.

I might have told her about the fireflies my husband led me to this summer at a small clearing in the park. We had to hike along a dark trail to get there. I imagined spiders, worried about twisting my ankle, and grumbled about having to do without my phone and flashlight, but we kept on until we reached the spot. The pitch black was broken suddenly by tiny bursts of light. Little flashes in the grass, the low-hanging branches, the crowns of trees. Like Christmas and New Year’s rolled into one. But quieter. Truer somehow. When my prospective editor used the word God, I should have told her about that dark hollow filled with light. The way we stood and stared and did not speak.
ESSAYS

23 BEYOND THE PRIMORDIAL OOZE: “REAL” AMERICANS AND THE SUPPOSED DIVIDE BETWEEN SCIENCE AND RELIGION
Dinty W. Moore
Searching for a new narrative on a road trip through small towns in West Virginia, Pennsylvania, and central Ohio

33 SEARCH HISTORY
Rachel Wilkinson
Is the Google search bar our new collective altar?

41 MAN OF SCIENCE, MAN OF FAITH
William Wan
Two answers—different, though not so different as they seem—to the timeless question: Why do I exist, and what am I supposed to do with my life?
“SHUDDERING BEFORE THE BEAUTIFUL”: TRAINS OF THOUGHT ACROSS THE MORMON COSMOS
Jamie Zvirzdnin
If the Church is the train, heading toward eternal happiness, why would you ever disembark?

UNDER THE STARS
Sylvia Sukop
A recent convert to Judaism struggles to make sense of her younger brother’s illness

THE BEST PANACEAS FOR HEARTACHES
Kristin Johnson
Why would God let children die? And other impossible questions
Jeff, John, Eldon, Dave, Ben, and Bruce meet most weekdays around the back table at the only McDonald’s in Ravenswood, West Virginia, chomping sausage McGriddles and swapping theories about why “it has all gone to hell.” One reason, they tell me, is because the aluminum plant south of town has shrunk from 12,000 to fewer than 1,000 employees, and another is that “people nowadays simply have no common sense.” The men offer a variety of examples, focusing on out-of-town visitors who can’t drive, don’t think, and huddle mindlessly, blocking the fast food eatery’s back entrance.

The six of them are retired, having once earned their livings as electricians, aluminum smelters, mechanical engineers, and dairy farmers. They seem inordinately proud of the fact that Ravenswood is said to have once had more churches per capita than any other town in America.
“We got one on every corner,” John boasts. “We’re in the Guinness Book of World Records,” Jeff adds, while the rest of the men sip their coffee and nod.

It is a chilly late-March morning and I’m an out-of-town visitor as well, on a road trip to explore the notion that America’s current political divisions are tied somehow to conflicting attitudes about science and religion, rationality and faith. Ravenswood, with its many churches and dying aluminum industry, seems a likely spot to ask some questions.

Jeff jumps right in, all too happy to oblige my curiosity.

“Science and the Bible go together just fine,” he reassures me. “They’re finding that more and more once they track the DNA. In fact, they’re finding that the people who were in Egypt actually came from Europe.”

Jeff—mid-sixties, stubble-faced, sporting a US Marine Corps ball cap and green plaid shirt—speaks at a dizzying pace, rattling off more ideas than my pencil can handle. But from the looks of him, he’s just warming up.

“A lot of people don’t know this,” he continues, “but Einstein got his theory of relativity directly out of the Bible. Of course, he was threatened not to talk about it because the powers that be wanted to push evolution. Science and religion used to be the same thing, before the Tower of Babel. You know that, right?”

Do I?

Jeff’s theories on Einstein and Babel are news to me, but the others just chuckle and smirk, like maybe they’ve heard all of this before.

Dave leans forward. “Listen, if you want to know about Bigfoot and UFOs, that guy right there’s your best source.” He points to John, a red-faced, thickset man in dungarees and a stained white T-shirt. “He got them both up his holler.”

I’ve clearly lost control of the conversation, and we’re only a minute or so in.

John puts down his breakfast sandwich, scowls in Dave’s direction. “They’re just trying to get my goat, trying to make me mad.” Then he turns back to the out-of-towner, the scowl widening into a friendly grin. “But I’ve never been mad … a day in my life.”

“Oh really,” Bruce counters. “Not a day in your life? How many marriages you had?”

“Three, I think.”

Eldon, tall, lanky, and pushing 80, scolds John. “Now you tell this man the truth about those Bigfoot stories.”

“All he saw was the hair,” Jeff intervenes. “Some hair on a tree. He didn’t see no Bigfoot.”

“He did,” Dave insists. “He just couldn’t get close enough.”

And then silence, the Sasquatch thread apparently finished.

Until Jeff decides to fill me in on John and the UFOs.

“He was out taking a pee and he chased the aliens away. He saved the world.”

FOR THE PAST YEAR, I’ve been part of a project titled Think Write Publish: Science & Religion, an attempt to use the tools of creative nonfiction to explore the idea that faith and rationality can coexist just nicely, thank you, despite various brouhahas over where we came from, how we got here, and whether the human species is or is not in the process of destroying the planet.

As of late, thanks no doubt to a horrifically contentious election cycle pockmarked by extended, often hyperbolic skirmishes over both science and religion, Americans appear even more divided, locked away in separate, seemingly incompatible camps. That’s the dominant narrative in the media, at least, but my instinct is that it can’t be quite so simple as all that. I’m guessing the truth of it all is more complex, less predictable.

Which led me to Ravenswood, and to other small towns in West Virginia, Pennsylvania, and central Ohio, where I had a series of conversations with so-called “real” Americans: folks outside of politics and professional punditry, and apart from the expert, analytical academic bubble where I—a tenured professor, professional skeptic, and inveterate agnostic—spend most of my time.

I wanted to speak to people who were neither steeped in political rhetoric nor provoked into shouting by the presence of television
cameras, and my questions were as simple as I could make them: Is the rift between those who favor science and those who follow religion as real and as wide as some suggest? Is there room for more complex, more nuanced views? If so, what do they look like?

**ONE DAMP WINTER EVENING,** I visit the Mills family in central Pennsylvania, a conservative swath of largely white, religious counties that consistently challenge the liberal vote tallies emanating from large urban outposts such as Philadelphia and Pittsburgh.

The Mills are devout evangelical Christians, meaning for them the Bible in the ultimate authority on all matters, every word true, a direct message from God. I join the parents, Don and Rhonda, and two of their three children in the family’s living room, in chairs prearranged into a conversational circle.

The two sons are just home on spring break from Grove City College. The older of the two, Samuel, plans to follow his father into engineering, while the younger, Isaac, a sophomore, is double majoring in biology and Biblical and Religious Studies, a combination I admit to finding surprising.

“Science and religion go hand in hand,” Isaac assures me. Confident and well-spoken, Isaac has close-cropped blond hair, the wide, square shoulders of a disciplined weightlifter, and just the hint of a beard. “There have always been strong Christians who are strong scientists. And those scientists could prove the theories that they came up with.”

He looks over at his brother and they both nod.

“In more recent history, though, there is the idea that you don’t have to prove what you believe in order for it to be true,” he continues. “Darwin, for example. He really was never able to prove each step in what is called evolution.”

Rhonda leans forward. “In today’s day and age,” she interjects, “opinions weigh more heavily than truth. Well, I hate to be a bearer of bad news, but not everybody’s opinion matters.”

“People follow what seems more exciting,” Isaac continues. “You know, is it exciting to think that something came out of the primordial ooze and changed to this and changed to that, as opposed to something being created? I mean, yeah, it seems exciting, but there’s not the evidence.”

I could argue that the idea of an all-powerful, white-bearded Creator waving his hands and fashioning all of this in seven days is just as electrifying as the idea of protohuman tadpoles crawling out of ancient muck. They’re both rather amazing, when you come right down to it. Isaac’s idea, on the other hand, that those who support evolution are merely caught up in the allure of the idea, seems to ignore most of what science knows about biology.

Isaac’s older brother, Samuel, anticipates my unspoken objection, jumping in to point out that scientific certainty can change over time. “During the Middle Ages, people thought mice came from grain, because whenever they opened a sack of grain, they saw mice running out. Today, that idea seems silly.”

“Another good example would be the Ptolemaic model of the solar system,” Isaac follows. “We thought the Earth was at the center, and then Copernicus came along, had the exact same data, but came to a different conclusion.”

Grove City College advertises “an academically excellent and Christ-centered learning and living experience,” so I feel safe guessing that Isaac and Samuel are presenting ideas learned in the classroom. They’ve paid attention, obviously, a fact that warms my professorial heart.

“Science is right, and the Bible is right,” Isaac explains further. “If they seem to disagree, it’s because our interpretation of the data is wrong.” He pauses briefly. “Or maybe our interpretation of the scriptures is wrong.”

This is some of the nuance for which I’ve been looking. Isaac is perfectly at ease with science, yet still holds the firm faith of an evangelical. Whatever problems that poses can be solved, in his view, with patience.

The father, Don, has been sitting quietly at the edge of the room, watching and listening. But when Samuel, a few months from graduation and looking locally for jobs in engineering,
Don finally joins in:

“Yeah. The last administration did a lot to destroy the industry.”

“Coal?” I ask.

Don nods. He works as an engineer in the nearby town of Tyrone, making particle reduction machinery for the mining industry:

“We crush coal, basically.” Samuel perks up, offering various examples of inconsistencies in “the data you see from Al Gore and that crew.” Climate data goes back only to the mid-1600s, he explains, “and they try to draw conclusions from ice cores, but I don’t think it’s enough.”

“Do you know where Al Gore’s family money comes from?” Don asks me.

I shrug, having no idea.

“Mining. I wonder if he’s going to give that money back.”

For a moment, I fear our conversation is going to veer into politics, marooning us on either side of the MSNBC/Fox News abyss. I’m also unsure how and to whom former Vice President Gore would return the family fortune. And then, Samuel surprises me.

“We heat our house with sustainable energy,” he announces proudly.

Isaac joins back in. “We actually heat it with the sun and the air, right?”

I look puzzled.

“We have a wood-fired furnace,” Don explains, pointing out the window to the tree-covered acreage behind the house.

“… and a very efficient wood burner,” Samuel overlaps. “We get our heat from the woods, and our syrup from the trees in the spring, and we’ve found a good balance of how much of our resources we use to maximize the efficiency of our property.”

I have liberal friends, environmentalists in their own minds, who do less than the Mills are doing. Whatever their views on global warming and fossil fuels, it is clear the boys enjoy how their steps toward sustainability prove wrong those critics who might want to equate climate change skepticism with energy gluttony.

About then it occurs to me that the house I’m sitting in, a crisscross of wooden posts and beams tying together the first floor with the second floor, and connecting the walls with the ceilings, might be part of the family’s sustainability effort as well.

“How did you build this?” I ask Don.

He smiles, glad that I came around to the realization. “Started excavating in 1995, the day Samuel came home from the hospital. In 1998, the day Isaac came home, we raised the frame.”

Isaac and Samuel joke some about growing up in the handmade house, how the network of posts, beams, and pegs formed a perfect climbing playset for two restless young boys. For a moment, they seem ready to jump up out of their chairs and illustrate.

But it is time for me to go, so the Mills can have their dinner. Rhonda walks me to the door, says she will be praying for me and for the success of the article I am writing.

“I don’t have all of the answers,” she shares, as I duck out into the chilly evening. “We can’t have all the answers, because God is God and we are not. And I’m fine with that.”

I’m fine with that, too: I’m not God. And to be honest, I’m not entirely sure how I even feel about God. I turned my back on organized religion in my late teens—like Groucho, I’m suspicious of any club, or church, that would have me as a member—but all of this had to start somewhere, right? You know, if there really was a Big Bang, who lit the damn match?

It seems clear—to me, at least—that neither science nor religion has the ultimate answer to the gargantuan question “Where exactly did we come from?” So, maybe a modicum of both faith and rationality are in order.

Or as Samuel Mills rightly points out, many Renaissance scientists were motivated by the desire to understand God’s plan in nature. Why can’t the two views simply coexist?

Thirty or so miles down the road, at Standing Stone Coffee in Huntingdon, Pennsylvania, I meet Deb Grove. Huntingdon is a railroad and manufacturing town, besieged, like most of the region, by the disappearance of blue collar jobs, but the coffeehouse sits near enough to Juniata College to have a hip campus feel.
Deb, with a PhD in biochemistry from Ohio State, worked a while in cancer research, then went on to direct Penn State’s Genomics Core Facility for 20 years. She is also a lifelong Baptist and identifies as evangelical.

“I was brought up in Ohio, with two hundred years of Baptists behind me,” she shares in a flat Midwestern accent. “Back in the ’60s and ’70s, being Baptist meant you weren’t allowed to dance and you weren’t allowed to have alcohol.”

Deb wears jeans, a striped shirt, a fleece vest sporting the American Birding Association’s logo, and the aura of someone who’s done taking crap from anyone. But then again, listening to Deb’s life story, it doesn’t sound like she’s ever had much tolerance for crap-givers.

The simple act of going off to college was, she explains, “a bit of a rebellion” for a Baptist girl in central Ohio in the 1970s. The idea of an advanced degree in biology was even more unusual, given her strong evangelical roots.

“Frankly, though, once I was in grad school, I got more grief about my gender than I did around my religion,” she tells me. “The chairman of a department I was applying to told me, ‘I don’t think women should go to grad school at all. I have daughters and I don’t think they should do this.’”

But she persisted, as the saying goes. On the day we talk, Deb has been retired for almost a year, trading in days spent sequencing the DNA of coral, ancient bison, and bacteria at the Penn State genomics lab for wandering nearby forest land in search of scarlet tanagers and golden-winged warblers.

Her LinkedIn page lists her “current” job description as:

1. Stay in Bed as long as I want
2. Get up and have some coffee
3. Get some exercise
4. Go Birding, Go Birding, Go Birding
5. Try out my “new” used golf clubs, visit the local bowling alley, etc etc etc

I overcome a momentary surge of jealousy to ask how she managed to strike a balance at work between the empirical, evidence-based nature of science and the Christian acceptance of revelation and faith.

“I’ve never had a problem with being a scientist and a believer. I don’t see any contradiction, though a lot of people do,” she answers.

Even the concept of “creation,” one of the stickier issues separating people of faith from scientific orthodoxy, doesn’t cause Deb any sleeplessness. “For me, the idea in the Book of Genesis was that there was a Creator, and that’s as far as it goes. The Creator did this, the Creator did that. The details aren’t that important.”

And evolution?

“Microevolution is easy to see. The problem with macroevolution is that you can’t set up an experiment to prove it. So, you look at what evidence is there and you draw your conclusions.”

The conclusion she has drawn is that evolution makes sense.

“For some people in the church, my views are wrong. But I believe we are created in God’s image, with certain characteristics, and one of those is intelligence. The pseudoscience and antiscience people are driving me nuts. I want to tell these people, ‘You’re not using the intelligence God gave you.’”

I ask her if she was open about her faith among her coworkers and fellow scientists over the years, or if she primarily kept it under wraps.

She closes her eyes a second, as if tallying up, before answering.

“Well, I did keep it secret, sort of.”

“Frankly, though, once I was in grad school, I got more grief about my gender than I did around my religion,” she tells me. “The chairman of a department I was applying to told me, ‘I don’t think women should go to grad school at all. I have daughters and I don’t think they should do this.’”

But she persisted, as the saying goes. On the day we talk, Deb has been retired for almost a year, trading in days spent sequencing the DNA of coral, ancient bison, and bacteria at the Penn State genomics lab for wandering nearby forest land in search of scarlet tanagers and golden-winged warblers.

Her LinkedIn page lists her “current” job description as:

1. Stay in Bed as long as I want
2. Get up and have some coffee
3. Get some exercise
4. Go Birding, Go Birding, Go Birding
5. Try out my “new” used golf clubs, visit the local bowling alley, etc etc etc

I overcome a momentary surge of jealousy to ask how she managed to strike a balance at work between the empirical, evidence-based nature of science and the Christian acceptance of revelation and faith.

“I’ve never had a problem with being a scientist and a believer. I don’t see any contradiction, though a lot of people do,” she answers.

Even the concept of “creation,” one of the stickier issues separating people of faith from scientific orthodoxy, doesn’t cause Deb any sleeplessness. “For me, the idea in the Book of Genesis was that there was a Creator, and that’s as far as it goes. The Creator did this, the Creator did that. The details aren’t that important.”

And evolution?

“Microevolution is easy to see. The problem with macroevolution is that you can’t set up an experiment to prove it. So, you look at what evidence is there and you draw your conclusions.”

The conclusion she has drawn is that evolution makes sense.

“For some people in the church, my views are wrong. But I believe we are created in God’s image, with certain characteristics, and one of those is intelligence. The pseudoscience and antiscience people are driving me nuts. I want to tell these people, ‘You’re not using the intelligence God gave you.’”

I ask her if she was open about her faith among her coworkers and fellow scientists over the years, or if she primarily kept it under wraps.

She closes her eyes a second, as if tallying up, before answering.

“Well, I did keep it secret, sort of.”

She pauses again.

“I mean, if you call yourself evangelical you should be witnessing all of the time.” By witnessing, she means sharing the good news of the Lord with everyone she meets. “But I guess my approach was: if people want to talk with me about it, fine.”

She pauses, considers her answer even further.

“God is going to direct people the way they need to go. I’ve seen that in my own life … in the ways that I’ve been directed.”

One more pause, and a nod.

“So, okay, maybe that’s more supernatural than a scientist would normally be, but that’s my spirituality. It’s a leap.”
LATER THAT DAY, I leap across the Juniata River to meet Jeff Imler, a biology teacher for 34 years at Williamsburg High, home of the “Blue Pirates.” Jeff is in his late fifties, a bit baby-faced despite the gray whiskers peppering his goatee. He lines up nicely with my stereotype of how a high school science teacher should look: blue dress shirt (the school color), a blue-and-silver tie with slanted stripes, thick aviator eyeglasses, and a pen or two tucked into his shirt pocket.

Williamsburg is part of “The Cove,” a narrow valley nestled into Pennsylvania’s Bible Belt, and deeply conservative. I enter the room laden with questions as to how one negotiates teaching biological science—and accepted scientific views on evolution—in such a school district.

Jeff startles me, however, by insisting right off the bat that there’s no problem at all. “None,” he smiles. “Never had a parent complain or a kid complain regarding that subject area.”

“Thirty-four years is a long time,” I say. “Zero complaints?”

“Never had any trouble.”

“Really?” I’m struggling to imagine how this could be. “Not once?”

I attempt to nudge Jeff’s memory with a rather insipid joke about parents storming the classroom with torches and pitchforks, but he just shakes his head. “I think the only teachers that get into trouble are the ones that hammer evolution and tell the kids that there is no God. I’ve never done that. I’ve always taken the position with the kids that I’m not here to tell them what to believe.”

“So,” I ask, “what do you believe?”

“I believe in God, and I’ll share that with the kids. I’d rather believe there was a divine entity that made all of this happen.”

The primordial ooze again. I’d always thought the notion that humans were directly descended from lowly, jibber-jabbering monkeys was the objectionable part of evolutionary theory, not the bubbling mud. The idea that primordial ooze, or to be precise, “primordial soup,” was a petri dish for life was put forward a full half-century after Darwin’s writings, and it is just one of several theories as to where it all might have begun. But the idea rankled Isaac Mills, and it rankles teacher Jeff as well.

“So, you don’t actually believe in evolution?” I ask.

“I do. Any organism, whether bacteria or a large mammal, that adapts to its surroundings, survives, continues to reproduce, and passes its genes on to their offspring, that’s evolution. If students want to believe that that happens by divine inspiration, that’s up to them. If they want to believe it’s by happenstance, that’s okay, too.”

Jeff stops and lifts his eyebrows, gauging my reaction.

“So, what about human evolution?”

“I don’t believe, personally,” he answers, shrugging and looking down, “that that happened.”

Though fossil evidence of early humans, such as Cro-Magnon man, is clear enough, Jeff clarifies, he doesn’t think those early ancestors are the result of evolution at all, but were instead put directly on the planet by divine intervention.

“If my students want to believe that all of this happened because of God and creation, that’s fine. If they don’t want to believe that all of this happened because of God and creation, that’s fine, too,” Jeff finishes. “Me? I just don’t want to think I came out of the blob millions of years ago.”

It becomes clear to me just how little I understand about how high school biology is taught in the twenty-first century. I thought the “scientific findings prove evolution to be true” approach was fairly standard, but I was wrong. In fact, just a few years ago, a survey of nearly one thousand public high school biology teachers showed that more than half—labeled “the cautious 60 percent” by the survey authors—present both the creationist side and the evolution-as-fact side and let the kids sort it out themselves.

I like Jeff and appreciate his candor, but he seems a bit hard to pin down. Evolution at the cellular level is easy to accept no matter what your faith, but as to the deeper question—how
Did humans happen to arrive on the planet—his answers seem evasive at best.

Maybe that’s necessary if you teach in The Cove, or maybe it’s because I’m sitting in front of him, notebook in hand, doing my best thoughtful interviewer nod, and asking questions that are none of my business. Whatever the reason, Jeff clearly fits somewhere in the middle of the supposed unbridgeable divide, proof that simple answers and strict categories will never capture the full picture.

My roundabout search for folks who inhabit some middle territory in the science-faith debate eventually leads me to Pete Yoder. He farms 1,600 acres of corn and soybeans just outside of London, Ohio. The corn is sold for use in making ethanol and corn sweetener, while most of the soybeans end up as tofu.

It is a large operation. Pete, cheerful, energetic, and commendably fit for a man in his late fifties, takes me on a brisk tour of the barns and outbuildings scattered across his sprawling property, stopping to explain each of the many machines he employs to run his farm: small tractors, large tractors, combines, headers, cultivators, grain conveyors, harvesters, ammonia spreaders, and even a pair of hopper-bottom 18-wheelers. He might as well be a kid showing me his Matchbox car collection, except these vehicles are real, and massive.

Many of them are GPS-guided, allowing him to track what has been planted, what has been fertilized, all of it cross-referenced with previous years’ yields, field by field, row by row. Pete clearly enjoys what he does, using the term “fun” repeatedly as he articulates how seed is fed into the spreader, how corn is cut, or how ammonia is “knifed” down into the soil.

After the tour, we retire to the maroon-sided farmhouse where he and his wife, Mary Ette, raised three now-grown children. Pete’s office, just off the family dining room, has a window looking out on a birdfeeder, populated by hungry grackles and a red finch or two.

“I’m a Christian, a person of faith, and I have no problem reconciling my faith with science,” Pete tells me as we sit on opposite sides of a large desk covered with farm catalogues. “Probably where I have incongruencies with my practices and what I believe—where those two don’t meet—is more in my political views. I find myself at odds with a lot of my fellow farmers.”

That’s an understatement, given the mainstream conservatism running through rural Ohio, and given Pete’s decidedly progressive views. A “Black Lives Matter” sign sits in a flower patch in his side yard, conceivably the only such sign in all of Madison County.

I ask what the neighbors think, and he laughs. “They’re used to me by now.”

Pete and his family are practicing Mennonites, a Christian denomination that runs from highly conservative—Old Order Mennonites share many practices with the Amish—to more modern. Traditionally, the more conservative Mennonites reject climate change, but Pete is part of a nascent Mennonite progressive movement embracing conservation and sustainability.

He employs a “no-till” method on his land, for instance, planting soybeans between the previous year’s corn rather than cutting the stalks and plowing them under, limiting erosion and chemical runoff. What becomes clear to me as we talk is that Pete’s focus on state-of-the-art farm machinery and fancy GPS guidance systems is not just farm-nerd gadgetry but connects directly to his wish for sustainability: each acre he doesn’t till, each row that requires less chemical treatment, every step that allows him to use less horsepower in his machinery and burn less fuel, is an environmental act.

He shrugs when I ask about this: “My farmer friends all laugh at the idea that a fifteen- or twenty-thousand-dollar addition to a tractor is going to save the world from climate change. They just scoff.”

Pete’s sustainable farming practices are based in science, but for Pete the practices are a spiritual matter as well. He was among the first in his part of Ohio to place an agricultural
easement on his land, guaranteeing that it will remain a farm in perpetuity. Though he deeply loves farming, he constantly worries about the long-term effects.

“Just the other day I removed a fence row,” he explains, meaning he turned a patch of wild, uncultivated land into land that could be planted. “But I know that I was also removing habitat for animals and birds. I look out at this landscape here and know it was once wooded, yet I continue to take down trees.”

His voice softens. “I used to want to own a farm, but the older I get the more I think of myself as just a caretaker.” He motions out the window, to the field across the road, a vast expanse of flat land and dried corn stalks. “I know I’m going to be out of here someday. I’m trying to think about what I’m leaving behind.”

MY ATTEMPTS TO VERIFY that Ravenswood, West Virginia, had so many churches per capita that it was once listed in Guinness come up empty. It may be just another myth, like Bigfoot, or the idea that America’s views on science and religion can easily be pigeonholed.

They can’t.

Nor are the two approaches necessarily at odds. Science and religion are both modes of inquiry, and both can help us to experience our world in richer, deeper ways. Choose one, choose the other, or if you can, choose a bit of both.

Yet for many people, evolution seems to be the sticking point. How did we get here? The idea that an all-powerful divine architect simply waved his hand and created us from nothing has a certain appeal. But to some of us, it is unacceptable, based too much in faith and unprovable religious teachings, what some call myths, going back thousands upon thousands of years. And of course, it raises the question “Why?” What did this divine architect have in mind? What’s our purpose here?

The pure evolutionary perspective, the similarly sticky “primordial ooze,” has its own shortcomings. It is scary, for one thing. Are we out here on our own, undirected, no divine plan? The idea of unorchestrated evolution also suggests we are not actually so special. Not chosen. What’s to keep the orangutans from hitting the genetic adaptation lottery one day soon and jumping the line?

Humans have been wrestling with these questions for as long as they’ve been stringing two thoughts together one after the other. I’m guessing the riddle of it all won’t be resolved anytime soon.

It takes some prodding, but I eventually get my retiree friends at McDonald’s to weigh in on the evolution dilemma.

Eldon, the eldest and one of the quieter of the men crowded around the table, firms up his mouth and shakes his head. “I’m not going to answer that.”

Bruce agrees. “Not a thing I really want to talk about.”

But Jeff, true to character, just can’t seem to keep his mouth shut. “We’re in the Bible Belt,” he chuckles. “We don’t believe in evolution.”

John takes the final bite of a fried hash brown. “My ancestors didn’t swing from no trees by their tails. They used their hands.”

The men are enjoying themselves. That much is clear.

“Yeah,” Jeff snorts. “Maybe so. But they still flung their poop like a monkey.”

Finally Dave enters the fray, his tone more serious. “I do believe in the Bible, and I believe in evolution. Evolution is simply the improvement of the species. Well, if you know anything at all about animal husbandry, the hog … You look at the hog, and you can see it has changed in my lifetime. It used to be shaped like this in the back—” he makes a small arch with his hand “—and now they’re flat. That’s evolution.”

“Huh,” John counters. “Science just went and made those hogs longer ’cause they wanted more pork chops.”

Jeff nods. “Yeah. And more bacon.”

There is, for the moment, enthusiastic agreement that science and religion are both fine, as long we have more bacon. Then my Ravenswood comrades commence downing their last sips of coffee, pulling on jackets, and making for the door.

Breakfast is over, until tomorrow.
Apply for Canada’s only MFA exclusively in creative nonfiction

We’re at America’s doorstep—and your dollar is worth 20% more here. Because we’re low residency, you don’t need to move or give up your job—and depending on your life and writing experience, you may not need an undergraduate degree either.

Your journey to completing your nonfiction book begins with a two-week August residency on Canada’s beautiful east coast, filled with lectures, seminars, workshops, and readings on the art and craft of creative nonfiction.

You’ll develop your proposal and work on your book with one-to-one guidance from your mentor, an award-winning writer. You’ll travel to New York City and Toronto for one-week winter residencies and meet with publishers, editors and agents.

Our graduates are being published. Join them!

To find out how to make your book a reality, go to www.ukings.ca/master-fine-arts-creative-nonfiction

MFA in Writing

core faculty
Charles Simic
Mekeel McBride
David Rivard
Ann Joslin Williams
Tom Paine
Sue Hertz
Jaed Coffin
Tom Haines

› small program emphasizing individual attention within a supportive community
› teaching fellowships and scholarships available
› stunning campus surrounded by nature and close to urban centers
› online journal at Barnstormjournal.org

Congratulations to Jennifer Latson, MFA ’13, for her new book The Boy Who Loved Too Much, Simon and Schuster.

For more student successes, visit cola.unh.edu/writing-mfa-news

University of New Hampshire
SOME PEOPLE GO RUNNING or meditate; they recite mantras or affirmations, carry pictures of the saints. My brother used to keep one of those mini Zen rock gardens in his room as a teenager, turning over his thoughts as he raked the sand back and forth. But for me, there’s nothing like pouring anxious feelings into an empty search bar, posing questions too big for any one person to answer.

Some questions I’ve asked Google, between the ages of eleven and twenty-six, in roughly chronological order:

• Why did my cat die?
• How do I talk to people?
• Why don’t my parents understand me?
• Who shot JFK?
• Do I have a brain tumor?
• Why isn’t love enough?
• Will I ever stop grieving?
• Why are there seasons?
• Why do cats purr?
• How do I know what I’m worth?
• Will I ever be a good writer?
• Should I be studying philosophy?
• Why was Nietzsche such an asshole?
• Why do people kill themselves?
• How large is the blast radius of a nuclear bomb?
• Does anyone’s family ever change?
• What is the difference between guilt and shame?
• Why did Elvis meet Nixon?
• How do I let go of anger?
• What if I hate my job?
• Why are avocados so weird?
• Am I having a quarter-life crisis?
• How deep is the deepest part of the ocean?
• Why can’t I want what I’m supposed to want?
• How many times does a blue whale’s heart beat per hour?
• Why?

This searching is the only prayerful thing I do, though I admit that as a form of prayer, Google search is problematic. Christianity emphasizes that the purpose of prayer is not to find answers, assuage existential anxiety, or to get things for ourselves. Instead, it’s a means of knowing God, something closer to surrender. Through knowing and accepting God, we can begin to know and be at peace ourselves. But maybe Google isn’t Christian; maybe it’s Buddhist. Everyone in the internet-connected world is familiar with Google’s uncluttered homepage: a single, rectangular search field with two buttons underneath, fixed in the middle of a white screen. Google’s colorful logo—originally designed to evoke toy building blocks—appears above the bar. The word “search” appears only once on the page, in the left button below the search field, though you can find it again by clicking on the square “app grid” button at top right, a feature added in 2013. Google has been praised for the minimalism of its homepage since its inception.

The Google homepage has been called “Zen-like” more times than are worth counting, though the last time I entered the Google search query “google zen-like homepage” it returned 13.4 million results. When I Googled “what is Zen,” I got this list in my third result:

• Zen is nothing and yet everything.
• Zen is both empty and full.

Bodhidharma, a fifth-century Buddhist monk, described Zen as a “direct pointing” to the mind and heart. He said it’s a practice of studying the mind and seeing into one’s nature. You sit, not expecting enlightenment to strike, but in concentration, waiting for things to be revealed to you over time.

**THIS IS HOW GOOGLE WORKS**: instead of giving you search results based on how many times your search query appears on a given website, it crawls the internet to determine how many times sites relevant to your search query are linked to other relevant sites. Then it ranks the sites and lays them out in order. This algorithmic ranking and delivery of the most relevant results is called “search quality.” Udi Manber, a former vice president of engineering at Google, described the still-highly-guarded specifics of the algorithm as the company’s “crown jewels.” Indeed, one of the most famous parts of Google’s ranking algorithm is PageRank, the rating system developed by Google cofounders Larry Page and Sergey Brin when they were Stanford PhD students.

I didn’t know any of this, despite having used Google since the company’s incorporation in 1998. I was 11 years old then. I can’t remember a time when searching for “university” on an early search engine such as AltaVista delivered the Oregon Center for Optics homepage as the first result, though apparently that’s what happened in the mid-90s. And although the summer Olympics were held that year, searching for “Olympics” on AltaVista returned mostly spam.

Larry Page once described the perfect search engine as something that “understands exactly what you mean and gives you back exactly what you want.” His description sounds kind of touchy-feely—like the friend or partner who intuitively knows what to say to you when you’re upset. But in fact, what makes Google feel this way is two highly technical components.

The first is Google’s reliance on natural language, the term of art for searching based on human
speech rather than computer commands. Squarely in the realm of artificial intelligence, natural language is why you can enter “hot dog” as a search query and Google can understand that you mean the open compound word and food item, rather than a perspiring poodle. Google is revolutionary in that its interpretive process is continually refined through tracking its user queries, which provide an enormous sample of how people speak naturally. Google historian Steven Levy writes, “Google came to see that instant feedback as the basis of an artificial intelligence learning mechanism.” In other words, the more we search, the more Google learns to talk and think like us. It draws ever closer to always knowing exactly what we mean and what we’re looking for.

This progression was most visible with Google Instant, the 2010 search enhancement that predicted what your search query would be and displayed search results as you typed. Clicking “search” was made unnecessary. Google’s official press release from that time explained that the thinking behind Google Instant was that people read faster than they type. Whole seconds were saved by letting users scan instant search results so they could refine their queries on the fly, rather than having to retype them. But the actual feeling of using Google Instant was that the search engine was thinking faster than me; before I could even fully think of how to ask my question, it understood and was answering.

“There is a psychic element,” then-Google vice president Marissa Mayer told a press conference, “because we can predict what you are about to search on in real time.” After seven years, Google did away with Instant in July 2017, stating that the feature is less fluid for mobile searchers. Still, auto-complete results show up in a drop-down menu below the search bar, drawing on decades of logged language. Even without Instant, Google still phrases my queries better than I could (and in milliseconds). It’s me without the clumsiness of my communication.

The second technical component is the way Google returns search results with more information (“gives you exactly what you want,” in Page’s words). In earlier search engines, results were returned based on how many times your query appeared on a webpage. But the expansion of the internet presented a problem: maintaining search quality when analyzing millions of websites becomes difficult with no way to determine relevance. But since Google search exploits the link structure of the internet, more websites simply means improved search quality. New websites supply more links, giving Google more clues to determine a particular website’s relevance to your search query.

And the more the web expands, the more complex and dynamic the portrait of user behavior becomes. Google finds failures in its ranking algorithm and then works to correct them. The more we search, the more Google can know about us. Google is recursive, circular. Empty and full, all-encompassing. Google was designed to be “the ultimate learning machine.”

I submit that the internet is the greatest human achievement—the integrated whole of human knowledge. In the mere fact of its integration, it is superhuman, beyond any one of us and inaccessible in its entirety. We need a medium to reach across the digital ether and speak to it. This is where Google comes in.

Like an oracle, Google can access and interpret the world beyond, though it is still essentially of this one. To me, the internet feels infinite, inscrutable, but the experience of coming to Google is still individual, intensely personal. Rather than being a superhuman artificial intelligence, what if Google is simply more human than all of us—imbued with all our semantics and our behavior and our private inquiries and our thoughts? It has learned to know us exactly as we try to know ourselves. Disembodied, it is the questioning impulse itself. I love it and hate it for precisely this reason.

THE WORD SEARCH originated in the twelfth century, from the French chercher meaning “to search.” It’s one of those words whose etymology can be slightly frustrating, because its place in language is apparently so singular and essential, its history is just iterations of the word itself. But search has its root in the Latin circare, to “go about, wander, or traverse” and circus, ring or circle. There is something recursive about it: to search, one goes round and round.

Technically, I have search in my email. I have search on my desktop. I have search in my pocket.
on my smartphone. I carry it with me; I shouldn’t need to search for it at all. But here I am, searching.

**MY FAVORITE BIT** by the comedian Louis C.K. is about how children are always asking questions. He starts by admitting that before he became a father he used to judge parents for their reticence to answer their children’s questions. He recalls watching a parent shut a kid down in a McDonald’s, telling him to just keep quiet and eat his damn french fries. But *why not answer questions*, C.K. asks his audience sarcastically, and expose your children to many wonders of the world?

“You can’t answer a kid’s question!” C.K. explodes. “They don’t accept any answer! A kid never goes, ‘Oh, thanks, I get it.’ They just keep coming, more questions: why why why, until you don’t even know who the fuck you are anymore at the end of the conversation. It’s an insane deconstruction!”

A conversation that begins with his daughter asking why she can’t go outside because it’s raining spirals out of control into analyzing why we’re here and C.K.’s admission that we’re alone in the universe.

He says, “At the end it’s like:

*Why?*

*Well, because some things are and some things are not.*

*Why?*

*Well, because things that are not can’t be!*

*Why?*

*Because then nothing wouldn’t be!* You can’t have fucking nothing isn’t—everything is!!"

It’s possible that I never outgrew this phase of life. I’ve always loved asking questions, especially why questions. I was raised in a largely secular family: my father a Reform Jew—the most liberal branch of Judaism that embraces the idea of a personal god—and my mother a lapsed Christian. In the abstract, at least, both my parents saw the value of religion, of engaging with something higher than yourself to find meaning and purpose. But both were also humanists and education researchers. Being a researcher, who lives and dies by the scientific method, comes with a built-in agnosticism and a low tolerance for woo-woo explanations. I’ve heard my father say that if something can’t be measured, it could just as easily not exist. Research was my parents’ chosen vehicle for making sense of the world, and they devoted their careers to answering difficult questions using it: Which students do better in school and why? Why did this or that social program not work? How do we judge the value of an education?

But science (and my parents) also acknowledge there are no definitive magic answers for us humans. Knowledge is gained only through deep thought and putting in hard work to arrive at the most plausible conclusion—and a plausible conclusion is as good as it gets. This is also a recurring religious lesson: aspire to godly knowledge at your own peril. Prometheus was sentenced to suffer for eternity; Adam and Eve were expelled from the garden, made mortal. Job only compounded his own misfortune by seeking divine answers. Scientific research is humble in its own way. It’s keenly aware of its human limits. My father’s email signature still reads, “In God we Trust, all others bring data.”

It’s possible this left me wanting. I believed in data of course, but they weren’t enough. When I was young, my parents got wise and gave me a tape recorder to talk into, to keep me entertained and eventually exhaust myself. Somewhere in their closets there are cassette tapes full of me rambling and counting, then asking what numbers are and how high they can go, then asking about infinity, and at some point, probably asking about God.

“You were also really into spreadsheets,” my dad tells me.

I guess no one was surprised when I decided to study philosophy in college. I thought: this is the place where all my questions will finally be answered. It’s an ancient discipline, after all. But searching for answers through philosophy turned out to have the same pitfalls as a six-year-old’s argument with Louie C.K. You could swap recordings of my class discussions on the metaphysics of Parmenides for C.K.’s whole routine, and you’d end up in the same place.

When—a little more than halfway through my degree—I first asked Google if I should be studying philosophy, the top results were pretty much what you’d expect. They remain unchanged today, in fact, and are all from university philosophy departments. You can tell they’ve tailored responses to all of their anticipated readers. For the college student with my pretensions: *To study philosophy is to grapple with questions that have occupied humankind for*
millennia, in conversation with some of the greatest thinkers who have ever lived. For that student’s possibly nervous parents: The philosophy major helps students gain critical thinking skills. You’re majoring in thinking. For the career-minded: You will acquire analytical skills crucial for success in many different areas. And (as was oft-repeated in my own college philosophy department) Did you know philosophy majors consistently have the highest LSAT scores?

But when I clicked deeper through the results back then, I also turned up a bunch of online discussion boards full of other disillusioned philosophy students. We all echoed our departments’ boilerplate: I studied philosophy to find answers. But then, everyone agreed, all I found were more questions. The scary thing about studying philosophy, others had commented, was not that you don’t get your questions answered, but that you start to doubt the value of questions and answers at all. You start to see that knowledge, as you had conceived of it, is relative and mutable. Can it even be studied? We’d all begun our degrees searching for Truth, capital T, only to realize such a search is foolish and will get you laughed out of the room. Someone should tell you to get over it, eat your damn french fries.

WHEN I FIRST BEGAN writing about search, one of my roommates, Dave, was a computer scientist at Carnegie Mellon University. CMU is home to one of the top computer science programs in the world. Some of Google’s most important employees—pioneers of search and artificial intelligence—studied and taught there. Dave would tell you that one of his degrees is in computer science, but he wasn’t technically part of the School of Computer Science; he was in the Department of Engineering and Public Policy, which is in spitting distance of computer science. Two of my other roommates, biomedical and civil engineers, loved to goad Dave and say that computer scientists aren’t really engineers.

Dave told me then, “I would define search as selective information delivery. Well, retrieval and delivery.”

When Dave and I first discussed search, he said a lot of things I couldn’t make sense of or put into context until I understood and internalized how Google works. He said one of the keys to searching is being able to quantifiably determine, à la Louie C.K., if something is or is not there. He said Google has gotten better at encoding people’s feelings and thoughts than it used to be. It’s moved beyond just being the most effective at matching up ones and zeros, and toward the idea of searching for concepts.

I told Dave that Sergey Brin said he wanted Google to be as smart as its user. “But I don’t think there’s any argument to be made against the idea that it’s smarter than me.”

“I think there’s a difference between being book smart and being wise.”

“How do you mean?”

“Well, imagine you go to the biggest library in the world, and rather than use a card catalog, there’s a librarian with super speed. She can retrieve anything you want from the library almost instantly. Is she smarter than you? Or is she just really good at performing that one task, at doing what she was designed to do?”

Dave reminded me of one of the dimensions of my love for Google. That is: its ability to retrieve practical information in the exact instant that I need it. Things such as directions somewhere, where food is, which brand I should buy, what time an event starts. Sometimes my search history is not pretty. Sometimes it might make you wonder how I’ve survived thus far as an adult in civilized society (though I suspect I’m not alone in this). Sometimes it looks like this (age 25):

- Blue whale
- Cat immunizations lasts how long
- Leftovers how long in fridge
- Wendy’s value menu
- Rice Krispie treats
- Arcadia Austin Shakespeare
- Valentines Day
- Luby’s restaurant hours
- Old Dominion University

Or this, from over spring break and at the South by Southwest Interactive Festival (age 24):

- Barbarella dance club Austin
- Boobs
- Define: vertigo
- Hangover dizzy how is this possible
- Vodka drinks
- Jeremy Irons
There are times I see Google as a loving parent, leading me through the world. It (apparently) tends to me when I’m drunk, shepherds me from place to place and brings me safely home, tells me everything I want to know about whales—all without judgment, resentment, or even hesitation. It can tolerate endless questions. There are times I think I would be dead without it.

Dave asked me how we distinguish between smart and wise (an artificial intelligence question). I parroted Socrates: wisdom begins with self-knowledge.

Dave: “Google has no self-knowledge.”

“Yet.”

“When you’re searching, you’re still searching all human content. Google isn’t generative. It can’t be.”

Despite Google’s seeming inertness, there’s still something appealing about the idea of having access to the whole of human content. It comforts me to know that it’s there, that I can call on it whenever I want. I can always pose the same tired questions—why we’re here or how the universe began—and know that whatever answer Google brings back is the best we’ve collectively come up with so far. Google alone can do this. It makes me hopeful. And it makes me feel less alone.

Me: “I know what you’re saying. Sometimes I ask Google questions I know it can’t answer. It just feels to me like such a benevolent God, trying to help and guide me.”

Dave: “I know, I anthropomorphize technology all the time.”

“You should ask it if you’re an engineer.”

“I actually asked it the other day: ‘why am I not an engineer?’”

NIETZSCHE SAID the most tragically human impulse was to question. All philosophy, he posits—the endless slog toward truth—is a not-even-thinly-veiled attempt at religion, whose purpose is to provide some justification for our suffering. Truth as God. Truth seekers as pilgrims. And all of this vain searching denies life as it is—a constant flux and power struggle, nothing more. Searching for truth in that kind of world is a sad farce, which does nothing but diminish the spirit.

When Western philosophy inevitably fails me, I always circle back to Buddhism. My education is in continental philosophy; with Eastern religions, I’m a dilettante—a stereotypical American who passingly wants to master stress management. And even at that, I’m pretty terrible. Being mindful in rush-hour traffic and visualizing myself as a flower are fine, but at the end of the day, I fail to meet the best-known Buddhist prerequisite: to leave all attachment at the door. To come to Buddhism searching for anything—truth, wisdom, inner peace, enlightenment—is the surest way never to attain any of those things. It’s a religion of nothingness, of emptying out, a process that begins when you stop wanting to be religious.

Jiddu Krishnamurti, a philosopher whom the Dalai Lama called “one of the greatest thinkers of the age,” says that if you deny the traditional approach of seeking truth, then you will find that you are no longer seeking. He writes, “That is the first thing to learn—not to seek. When you seek, you are really only window shopping.” In the same vein as Nietzsche, he repeatedly refers to truth as “a pathless land.”

A therapist once advised me, in the spirit of quelling my lifelong anxiety, to always return to my breath, in and out—a Zen Buddhist practice. Just this, just this, she said to repeat on the inhale and exhale, something I took as its own small prayer. I thought this was mostly worthless at the time. For me, bouts of anxiety never feel like just this, but the opposite. They’re the intrusion of the whole incomprehensible world, which I feel ill-equipped to understand and then terrified to live in. I could pray for wisdom or a greater sense of inner peace—like the Serenity Prayer, to accept the things I cannot change. But I’ve also read that at bottom, anxious, questioning people harbor a secret wish for control. We want to make the world known and manageable. Isn’t this part of the reason why children ask questions?

I pose as if what I want is to earnestly search, to make some kind of digital pilgrimage, but that’s not really what I want. I don’t seek space for questions, to let them hang and maybe have things revealed to me. I don’t want to do the hard work of detachment or faith and acceptance. It is hard for me to see prayer as anything more than an outlet for my private melodrama. What
I really want is instant gratification, answers on-demand.

I know all of these philosophers are right. I’m guilty of all their charges: I am a child, wanting easy answers, a god craver, mired in attachment and worldliness. A sinner. I feel constantly betrayed by my youth. I hate myself for seeking childish things—truth, meaning, the possibility of a loving god. For asking for these things from a mystical series of algorithms. But I want them still. Even though I can imagine Nietzsche, my therapist, the Dalai Lama and every professor I’ve ever had—all shaking their heads, handing me a tape recorder.

**THE ONLY TIME** I did poorly on an English paper was writing five pages about *Oedipus Rex*. The assignment was simple, borderline cliché: identify what doomed Oedipus and analyze what makes the play a tragedy. I knew my teacher wanted me to write about hubris, to give the classic reading that in denying his own fate, Oedipus sealed it. Moral: Don’t mock the gods with your vanity.

But reading the play, I felt sorry for Oedipus. He’s a blowhard to be sure, harassing Tiresias the prophet and bullying everyone to get information. But what really drives him is a desire to learn the truth about his identity. It’s a universal need. And it’s a mission no one else in the play will take up, even though the health of the entire city of Thebes depends on it.

At one point in the play, Jocasta, Oedipus’s wife/mother—though the latter is yet to be revealed—implores him to drop his whole investigation. Oedipus says that he won’t do it, that not knowing the truth will only bring him more distress. “O you unhappy man!” Jocasta replies. “May you never find out who you really are!” Suspending Freudian analysis for a moment: this is his own parent, telling him to quash the question *who am I?*

Schopenhauer once wrote, in a letter to Goethe, that what makes “the philosopher” is “the courage to make a clean breast of it in the face of every question.” Schopenhauer compares the philosopher to Oedipus, who, “seeking enlightenment concerning his terrible fate, pursues his indefatigable inquiry, even though he divines the appalling horror that awaits him in the answer.” He adds, “But most of us carry in our hearts the Jocasta who begs Oedipus for God’s sake not to enquire further.” Nietzsche later mocked Schopenhauer for this false heroism, what he called a deeply misguided “will to truth.” It’s only vanity, Schopenhauer says. Hubris.

In my paper, I took up Schopenhauer’s claim. I argued that truth-seeking was Oedipus’ tragic flaw. My teacher gave me a barely passing grade. “A closer reading would’ve revealed that it’s all hubris,” she commented. At the time, I was livid. Who wants to read about hubris over truth-seeking? But I’ve started to wonder if the two might be closer than I thought.

**SOME THEORISTS ARGUE** that technology such as Google search will kill off the questioning impulse. Ray Kurzweil, for example, has popularized the concept of a technological singularity, when computers advance to a point of superintelligence such that their predictive capacities outstrip our own. A post-singularity world, he posits, will be full of technology that goes beyond the control of a single person, perhaps like the restless, yearning operating system in Spike Jonze’s movie *Her*. For my part, I imagine the singularity as Super Google. Right now, as Dave said, Google can access information, interpret it, but not “understand” it in a human way. But it’s arguably a fine distinction.

The writer Mike Thomsen compares this moment—Kurzweil predicts we’ll cross over around 2029—to when dogs separated themselves from wolves and became domesticated.

“Years from now,” Thomsen writes in *The New Inquiry*, “what we think of as a computer will look on our efforts to work out logic problems with the same paternalistic appreciation we feel when dogs stop to inspect a promising pile of trash on the sidewalk, hoping to find in it something meaty.” Our pets, he says, will never resolve their “instinctive questions of hunger,” but they also don’t need to. They have us to lead them, and we enjoy having them around, too, so the end is just mutual enrichment.

I am similarly split between the child and the adult, the seeker and the enlightened one, who simply accepts. I think about going to my computer and searching how to let go.
REPORTERS LIKE TO SAY their job is to comfort the afflicted and afflict the comfortable. And to some degree, that’s how I saw it, too.

For more than a decade, I’ve spent my days wading through the grim realities of the world—mass shootings, disasters that decimate entire communities, atrocities quietly carried out by authoritarian regimes. I’ve seen both touching kindness and horrific cruelty and have tried to expose and make sense of both.

I once thought of my job as being not so different than that of my father, a minister who spent his life searching the world for truths and bringing words of comfort to the suffering. But these days, I am not so sure.

From the time I was a young man, I had the goal of following in my father’s steps and devoting my life to ministry and the religious realm—or at least pursuing those topics in my writing. I developed an expertise in the mystical and canonical, in the concept of forces that could not be seen, much less proven and measured by empirical method.
In recent years, my work had become increasingly personal, and I’d come to view my work—examining people and the world around me—like that of a psychologist, who studies the mind of others in hopes of finally understanding himself.

**IN JOURNALISM**, some reporters change jobs and subject-matter beats constantly. Others find their specialty and stick with it for years and decades. That takes time, commitment, and sacrifice, but it’s often the only way to develop a network of sources and expertise in a subject.

I had none of the above when I moved to the science desk this year. It was an unexpected proposition for someone like me; until then, my career had focused on the two driving obsessions in my life, China and religion.

Just a few weeks into my new job as science correspondent, I got a call from an old source from my days as a religion reporter. There’s a man you should meet, she told me.

His name was Jaime Maldonado-Aviles, and he had worked for years as a neuroscientist at the laboratories of Yale University. That is, until recently, when he decided to give it all up and quit science entirely to pursue the prospect of becoming a priest.

I met him one day this summer on the campus of Catholic University of America, where he was taking classes as a seminarian.

He showed up to the coffee shop already wearing his clothes as a priest-in-training—a jet-black shirt, topped with a small white collar. And as we talked—sharing the stories of how we had arrived at this point in our lives—the conversation at times took on the feel of a confession. We were fellow travelers, each coming from a land foreign to the other, crossing paths along the border.

I asked Jaime what had caused him to leave science.

He told me how three years ago—at the pinnacle of his career as an Ivy League researcher, having finally received the offer of a tenure-track position—he felt a nagging sensation inside. By that point, the feeling had been plaguing him for years, especially at moments of success: when he learned that a paper years in the making had been accepted for publication, say, or after winning a prestigious post-doctorate fellowship. It wasn’t so much a feeling as it was the lack of feeling—an emptiness that made such moments ring hollow.

When he was finally offered the tenure-track job—a goal he had been working toward for years—he thought back to something a teacher had told him at the Catholic high school he’d attended: “Pray so that you study what God wants you to study.”

He thought of his father back in Puerto Rico, a medical lab technician whom he had followed into science. He recalled how, despite grueling hours in the lab, his father made time every night to retreat to a corner of their house and pray, searching for guidance.

Like his parents, Jaime also prayed daily and attended church, but he found himself questioning whether he’d ever truly listened for God’s voice.

“I lived a pretty compartmentalized life. I did my science during the week, and then went to Mass on the weekend,” he said. “I took pictures of stained neurons, tried to understand how the cells interacted. But I rarely thought about the miracle of how that worked. How we become who we are, how we are able to even exchange ideas and have these complex relationships with other people. What the mechanisms are of the soul.”

**SOME OF MY EARLIEST** childhood memories are of falling asleep on the hard pews of an old church in Saskatchewan, Canada. I remember the strange dreams I would have, drifting in and out of consciousness, as my father’s words washed over me from the pulpit.

In those days, my father preached in Chinese to a group of elderly immigrants who had spent their lives working menial jobs in convenience stores, hair salons, and restaurants in the remote Canadian hinterland.

His words were so foreign to me back then. It wasn’t just the language that confused me, as a boy of seven or eight. It was the concepts: Faith. Forgiveness. Kingdoms in heaven. Broken bodies on crosses.

On weekends, I tagged along with my parents as they made the rounds from one home to another, listening to their parishioners describe the pain in their bodies as they approached death,
the pain in their hearts as they sifted through the life behind them. Looking for purpose, searching for signs of God himself. My father would often comfort them with a soft word or a choice verse from his cracked, black-bound Bible.

It wasn’t until I was older that I realized the power in his words.

I remember, as a teenager, encountering an old woman who took my hands one Sunday, clasping them in a delicate, paper-thin grip. She told me in Chinese that my father’s words were a gift. That they had on many occasions moved her to tears. That in the darkest time of her life they had revealed to her the voice of God.

This happened again and again as I became an adult and met other former parishioners of my father.

I came to see the healing one could bring as a minister, the difference one could make in people’s lives. Eventually, I assumed, this would be my calling as well—to go to seminary and help others as my father had before me.

But it didn’t happen that way.

As a young man, I prayed, asking God if this was my path, and was met with silence. I enrolled in a class at a seminary, a course on the prophets of the Old Testament. I thought I would feel a natural kinship with these ancient men, truth-tellers from eras past. But the course—like much of seminary—was not what I expected. It focused on the academic underpinnings of theology rather than its application to the world outside and how to help those living in it.

By the end of it, I was thinking hard about what I knew was required from a minister’s life—the sacrifice and humility—and came to the difficult realization that I fell deeply short on both counts.

And so, to my father’s and my own surprise, I became a reporter.

THREE HOURS INTO our conversation, Jaime notes with slight embarrassment the students milling around us in the coffee shop.

At 38, with an entire other life and career behind him, he is considerably older than most of them, he points out. Now halfway through his studies at the seminary, he will be 41 when he takes his vows.

I ask him about that nagging feeling he felt at Yale and how he came to believe it was from God. During his work in the lab, he said, his thoughts would often wander back to his teenage years and the one time he had felt truly alive: during a mission trip to Venezuela.

He remembered the anxiety he had over leaving behind everything he knew. For a few months that summer, he joined a group working in an impoverished region several hours outside Caracas. Before he left home, his mother forced him to take a belt with a hidden pouch sewn into it, where she had hidden $80.

Four nights into the trip, while sleeping in an empty local school, his group was robbed by men armed with guns. The men took all their money and passports. One man even grabbed Jaime’s shoes and jeans. But before slipping out the door, the man left behind the belt Jaime’s mother had given him.

Afterward, as he and another boy—clutching Jaime’s belt, the only money they had left—tried to get new passports at the U.S. consulate, they were told the fee was steep: $80 exactly.

The whole thing could easily be explained as coincidence, Jaime admitted, the way the rational mind is always working to find meaning and narrative in the chaos of life. But to him, it felt like nothing less than a message from heaven—that by sacrificing his home and traveling to another place in search of God, he had put himself in a position to hear him.

That feeling of providence, communion with something greater outside of himself—that’s what he felt was missing in his lab.

WHEN I BEGAN WORKING as a religion reporter at my newspaper, I thought I had finally found my calling in life. The two halves of my world, converging at last as one.

The work felt urgent, important, fulfilling. I roamed the halls of churches, synagogues, and mosques, talking to people as they searched for God and confronted life’s deepest questions.

Often, I discovered, what lay at the center of many people’s hearts was this central question: Why do I exist, and what am I supposed to do with my life?

I wrote about a woman who heard God telling her to start a church in the middle of a super-
market. I followed her as she preached in the checkout lines and rubbed oil on the foreheads of those willing to be anointed as they paid for their week’s worth of groceries.

I wrote about a Muslim-American soldier who heard Allah’s call for him to enlist in the U.S. Army, only to question it amid death threats from fellow soldiers during the War on Terror.

I wrote about a group of young men at a rural seminary in Maryland who were on the cusp of taking their final vows to enter the priesthood. I asked them how it felt then, at a time when the Catholic Church was in the throes of its sex abuse scandal. They told me how it suddenly seemed strange to tell someone you wanted to become a priest, as if you were admitting something was wrong with you. They spoke of their own doubts and conflicting desires, especially to marry and start a family.

For many of them, the choice boiled down to a belief in their vocation.

We use the term nowadays as just another word for occupation or career, but in early days, vocation referred literally to a call from God. It stems from the belief that God creates us with unique traits and gifts so that we can be used for a specific purpose. Finding your life’s vocation meant you had heard the voice of God.

“You realize it isn’t about you,” one seminarian told me during my visit. “It’s about what God has intended.”

As a religion reporter, I believed I had discovered my vocation.

But just months after my visit to the rural seminary, I found myself on a plane to China—dispatched by my newspaper to fill in for a correspondent who had to leave the country for a month. It made sense. I spoke Chinese and had long been interested in China’s strange and sometimes brutal system of governance.

The trip, however, changed me. I became obsessed with the country, with the massive change underway and the suffering often inflicted by that change and China’s morally fraught government.

My two months in China turned into five years. And after it was over, I found myself returning to the United States, no longer certain of this notion of vocation—the idea of being called to one thing as a way of finding meaning and making a difference.

I was no longer a religion reporter—the goal I thought my whole childhood had been preparing me for. I was no longer a China correspondent—the fever that had gripped me and burned through all else in my life.

I spent two years after my return to the United States wandering across the country, parachuting from one disaster zone to another. And then my editors asked me to consider a new assignment: science.

I ASK JAIME how he finally made the decision to abandon his work in neuroscience.

He told me about a sermon he heard at Mass during his last years doing post-doctoral research at Yale. The sermon was about an encounter Jesus has with a rich young man.

The man tells Jesus he has followed every commandment to its fullest and asks what he still must do to win eternal life. Jesus tells the man there is just one thing missing, an empty hole in the rich man’s life.

“Go, sell everything you have and give it to the poor,” Jesus tells him. “Then come, follow me.”

At this, the story goes, the rich young man’s face falls, and he leaves in sadness because he knows he cannot bring himself to do it.

When Jaime heard this sermon at Yale, he said, he started thinking to himself whether research was truly how he was supposed to spend the rest of his life. He thought about how he would feel if he were to die in a matter of years, what his biggest regret would be.

And he decided that even if he didn’t know for sure whether that empty feeling inside was God calling him, his biggest regret would be not having tried to find out.

Some believe that science is the only way to arrive at truth and certainty, he told me, but he has never believed that to be the case. “Science is how we observe and measure things in this world, but there are things beyond this world, beyond what we can observe. That is where God exists.”

He tells me that even now—three years into his training to become a priest—he still has doubts at times and feels the nagging emptiness inside.
The difference, he said, is that he is also growing in faith. “That is the definition of faith, giving yourself over in trust.”

**THERE’S A SERMON** my father often preached when visiting a new church. I always thought it was his best one, although he would never have put it in those terms.

As my father got older, he began to teach more at seminary and preach less. His sermons, as a result, became a bit colder, more intellectual in their examination of the text. But somehow, whenever he taught the story of Jesus’s visit to the two sisters Mary and Martha, he would revert back to old form.

There was something about the source material—perhaps the parable-like nature of it, or the way the story boiled the world down to these two polarizing, contradictory sisters.

Up on the pulpit, my father would reenact with almost comical physicality the busybody sister, Martha, bustling about the house, cooking and fussing over the preparations that came with hosting the world’s savior in your home.

Then, my father would stoop into a frozen crouch and talk of how, amid all the bustle, the other sister, Mary, simply sat rapt at Jesus’s feet and listened.

Eventually, the exhausted Martha couldn’t hold in her frustration any longer. “Don’t you care that my sister has left me to do the work by myself?” my father would exclaim in Martha’s voice. “Tell her to help me!”

“Martha, Martha,” Jesus replied, “you are worried and upset about many things, but few things are needed—indeed, only one. Mary has chosen what is better, and it will not be taken away from her.”

In the decades since I first heard this story, I’ve often thought of myself in terms of those sisters. Sometimes, I see all of humanity as a collection that can be sorted into Marthas and Marys.

Mary—the rational, pragmatic part of us—focused on what is before us, what we can see. Martha—the rational, pragmatic part of us—focused on what is before us, what we can see. Mary—our more intuitive, emotional part—drawn to the inexplicable, the impossible, and able to recognize it for what it is. The head and the heart.

As a boy, I felt bad for Martha, reprimanded for just trying to do what she thought was right. As a teenager, I felt an unearned degree of superiority toward her, for missing the obvious, more important thing—the fact that the messiah himself was in her home, speaking to her, calling to her.

But as an adult, I have felt frustration more than anything at Jesus and his words. “Mary has chosen what is better,” he says. “Few things are needed. Indeed, only one.” And yet, he never spells out, for the sisters or us, what that one thing is.

I have, at various points in my life, felt a degree of anger at this capricious nature in the Bible and religious teachings in general and doubted their value. If that one thing was so important, why not just come out and say it? Why send us forth into the world, combing through the wreckage of life, trying in vain to figure it out for ourselves?

At times, I’ve doubted whether the one thing even exists. And I’ve come to the conclusion that many things in this world, and people most of all, do not fit so easily into tidy parables.

For my father, however, the climax of the story was never the visit, but what happened later. In his sermons, he often focused more on Jesus’s final visit with the two sisters—just days before the world would turn on him, before his broken body would be hoisted up onto the cross.

During Jesus’s last visit, my father would point out, Mary bought a pint of expensive perfume, worth an entire year’s wages. She poured it onto Jesus’s feet and began using her own hair to wipe them clean. When others began criticizing her for wasting, in an instant, that exorbitant perfume, Jesus rebuked them: “Leave her alone. Why are you bothering her? She has done a beautiful thing.”

From the pulpit, my father would pause at these words to quietly reenact the scene, his hands rubbing his hair over the imagined feet of Jesus. Often, the congregation would be stunned by his actions, watching in a rapt, eerie silence.

It would always strike me later as almost comical, the image of my father—a man more serious than any I’ve known in life—doing this silent pantomime on the stage. But in the moment, it was hard not to feel the weight of
that silence, to smell the perfume in the air and sense the utter commitment represented by Mary’s actions.

When you finally find that one thing in life, my father concluded, you cherish it. You go out and buy the most expensive perfume that exists and you use it all up, even sacrificing your own body and life for it.

**PEOPLE OFTEN DESCRIBE SCIENCE** in terms of certainty, data and evidence, but there are aspects of the field that are as mired in mystery and beauty as any religion—that require searching not just for truth but for our humanity.

In my new job, my reporting focuses on the moral gray areas of science. I write about people pushing on the frontiers of research to see if they can make the impossible possible. And I write about the soul-searching ethical questions they often encounter in that process.

But a few days before my meeting with Jaime this summer, I was asked by the science desk to help cover the total eclipse that would soon pass over America.

I spent several days researching the history of eclipses through time and was moved by accounts that stretch back to some of the earliest recorded instances of man’s awareness of himself and the world around him.

In account after account, I read of how our ancestors over the millennia looked up at the sky on days like the one this past August, and what they saw there filled them with fear and wonder. In light of the sudden darkness in the sky, many struggled to explain this force that was clearly bigger than themselves. It spawned myths, altered belief systems, reshaped the way entire civilizations saw the world and themselves.

On the day of the actual eclipse, I was on the phone, talking to a network of thirty-some reporters and freelancers whom our newspaper had stationed across the country. My role was to gather their accounts and weave them together into one coherent story—to try to make some sense of this scientific and surprisingly emotional day.

I spoke to scientists who broke down into tears at the beauty of the sight. I wrote about parishioners outside a church, screaming prayers and praises to God when the moment of totality finally arrived. I wrote about an elderly woman in Idaho City, who looked up and could not help thinking of the son and husband she had buried—the two lights in her own life now gone dark.

And just before 2:42 p.m.—when the partial eclipse was supposed to pass over my own office in Washington, DC—I stole away to the roof for a few minutes to catch a glimpse for myself.

From the top of our building, I watched the darkness spread and felt the air grow cold.

I thought about how many in previous centuries had looked at the sun, darkening in this way, and read into it foreboding signs of the apocalypse. And others who had seen in it the exact opposite—signs of hope, confirmation of God’s existence.

I thought about those times in my own life when, like Jaime, I believed I had heard God speaking to me. Those rare moments when the world almost seemed to darken and narrow until there was just one thing before me, the faint sound of a whisper.

Afterward, back at my desk, it seemed strange to me how the way we view eclipses nowadays has changed so dramatically from that of our ancestors. It is now a social media event. There are livestreams on cable news. Online tools from NASA for tracking each phase. Even the special filtered glasses distributed at museums and libraries. None of that existed before.

And yet, little of the experience itself has changed.

There is still something inexplicable about it. Like a rare glimpse into another world.

In most religions, Christianity included, light usually represents God, clarity, truth. But the reverse is true with eclipses. It is only during the darkness, scientists note, that we are able to truly see and study the Sun and its corona. It is only in the dark that we are able to see what is normally hidden.

And we emerge afterward, our eyes blinking, our minds still adjusting to the transition from a place of mystery and awe, back into the normal explainable, predictable, and knowable world.

Even so, we carry the memory within us. That glimmer of truth we once saw in the dark.
COLUMBIA UNIVERSITY SCHOOL OF THE ARTS

MFA WRITING PROGRAM
NONFICTION • FICTION • POETRY
OPTION FOR JOINT COURSE OF STUDY IN LITERARY TRANSLATION

Scholarships, financial aid and teaching fellowships available.

Join a thriving School of the Arts community in New York City offering graduate degrees in film, theatre, visual arts and writing.

Visit arts.columbia.edu/cnf for more information.

FULL-TIME FACULTY
NONFICTION: Hilton Als, Lis Harris, Leslie Jamison, Margo Jefferson, Richard Locke, Phillip Lopate

FICTION: Paul Beatty, Nicholas Christopher, Deborah Eisenberg, Richard Ford, Joshua Furst, Heidi Julavits, Binnie Kirshenbaum, Alexandra Kleeman, Victor LaValle, Sam Lipsyte, Ben Marcus, Ben Metcalf, Orhan Pamuk, Elissa Schappell, Gary Shteyngart, Alan Ziegler

POETRY: Lucie Brock-Broido, Timothy Donnelly, Dorothea Lasky, Shane McCrae, Deborah Paredez

TRANSLATION: Susan Bernofsky

RECENT ADJUNCT FACULTY

UNLV CELEBRATES THE NEW M.F.A. & PH.D. IN LITERARY NONFICTION

The Creative Writing International program at the University of Nevada, Las Vegas, in partnership with the Beverly Rogers, Carol C. Harter Black Mountain Institute (BML), celebrates its 20th anniversary by adding an M.F.A. and Ph.D. in Literary Nonfiction to Poetry and Fiction.

Our three-year program stands out for its international focus requiring travel abroad and a literary translation. We fund all M.F.A. students. Ph.D. students earn BML fellowships.

Students may also work with the established journals Witness and Interim, and The Believer, a five-time National Magazine Award nominee, now published by UNLV’s Black Mountain Institute and edited by its executive director Joshua Wolf Shenk.

Nonfiction authors David Morris and José Orduña have joined our faculty to teach alongside poets Claudia Keelan and Donald Revell, and fiction writers Malie Chapman and Douglas Unger. MacArthur Fellow Adrian Nicole LeBlanc will be visiting faculty in fall 2018.

unlv.edu/english/academic-programs/mfa-creative-writing
unlv.edu/degree/phd-english-creative-dissertation

WE’RE SEEKING STRONG, DEVELOPING WRITERS WHO WANT TO BE GLOBAL CITIZENS.

APPLY TO JOIN US IN LITERARY LAS VEGAS — A DIVERSE, DYNAMIC, AND AFFORDABLE PLACE TO LIVE AND WRITE.

THE BELEVER BLACK MOUNTAIN INSTITUTE

Beverly Rogers, Carol C. Harter

UNLV College of LIBERAL ARTS
“Shuddering Before the Beautiful”: Trains of Thought Across the Mormon Cosmos

JAMIE ZVIRZDIN

If then th’ Astronomers, whereas they spie
A new-found Starre, their Opticks magnifie,
How brave are those, who with their Engine, can
Bring man to heaven, and heaven againe to man?
—John Donne

If you take the Green Line from the Salt Lake City International Airport to the Temple Square TRAX station downtown, you’ll be within walking distance of the Salt Lake Temple. If you decide to venture onto the temple grounds and cast your eyes up its lofty spires and battlements, the castle-like exterior will reveal a host of astronomical markings: sunstones, moonstones, Earth stones, and even Saturn stones adorn its granite face. Most captivating for me as a teenager—a starry-eyed wannabe scientist and scrupulously obedient Mormon—was the Big Dipper on the western face of the temple’s central tower. The seven stone stars are positioned so Dubhe and Merak, the two end stars of the cup, align toward Polaris, the North Star, just as they do in the night sky—an elegant tethering of Earth to heaven.

The architect of the temple, Truman O. Angell, said he included the Big Dipper to remind Mormons that the lost might find their way by the aid of the priesthood, the power of God given to men to do his work. When I was a teen, my exclusion...
from this priesthood—as a female—did not consciously bother me. But I did long for knowledge, for understanding, and yes, even for power: the power to heal the sick, to baptize the living, to raise the dead.

I was also excited to find out what exactly happened in the upper echelons of our temples, where many of my faith's most sacred ordinances and rituals are held. Before they go on full-time church missions or marry in the temple, Mormons are expected to attend a ceremony called the Endowment, where they receive additional spiritual instruction and make covenants with God. Church leaders forbid members to disclose the details of this ceremony outside the temple, so I didn’t know what covenants I was expected to make. However, we were encouraged to learn about the temples, so to prepare, I consumed Hugh Nibley’s 1992 tome Temple and Cosmos. Nibley taught at Brigham Young University and was highly respected in Mormon circles as both a scholar of ancient cultures and a prolific—if esoteric—apologist for Mormonism.

In Temple and Cosmos, I learned that templum originally referred to any consecrated space. A Roman augur, or prophet, would find an open space and, with his staff, scratch an encircled cross into the ground, the urbs quadrata; With this earthy compass, the prophet could establish the precise direction in which prophetic birds flew. He’d wait at the point of origin between the cardo (N/S line) and the decumanus (E/W line), and he’d record when these winged messengers came, or failed to come. He’d then use these signs from heaven to understand the universe and his place in it. Nibley saw this practice as a parallel for modern temple worship, and I was enchanted with the idea. The temple was the faithful Mormon's urbs quadrata, a place to get my bearings, the ultimate spiritual coordinate system.

Brigham Young, second prophet of the Mormon Church after Joseph Smith, also knew a thing or two about coordinates. An inspired planner, he oriented entire cities around the Salt Lake Temple. One block north of the temple was 100 North, one block east 100 East, and so on. I always knew how far away the temple was. My home in Sandy, Utah, was about 11 blocks east and 110 blocks south, at the foot of Lone Peak. Looking westward across the valley, I could see the Jordan River Temple, the temple where eventually I would promise to give myself to my husband and he would promise to receive me. At night the white glow from its one massive spire acted as a beacon of peace and hope—and a literal beacon for airplanes flying toward the Salt Lake airport.

My best friend, Brent, lived up the street. On Sundays, he made the clock tick a little faster and the hard beige chair seem a little softer as we talked and laughed—quietly—and on weekday mornings he forced me to listen to Counting Crows and Third Eye Blind as we drove to high school. We competed fiercely for the top grades in our classes, and he usually beat me. I especially appreciated his friendship because it was difficult for me to connect with other girls in my neighborhood/church/school, whose primary focus seemed to be attracting boys and preparing for marriage and families. But who wanted to talk cosmetics when you could talk about the cosmos? What are boys to black holes? If only God could tell me what lay beyond the event horizon! As I studied The Book of Abraham, a text Joseph Smith said he had translated from ancient Egyptian papyri, I grew wistful. Why couldn’t the Almighty give me a vision like he’d given Abraham, a glorious revelation of all God’s creations—including the prophesied existence of a planet named Kolob, a planet “nigh unto the throne of God”? Wasn’t I, like Abraham, a seeker of greater happiness, righteousness, and knowledge? How long would it take before I proved myself worthy? It didn’t seem right that I had to wait so much longer than my male friends and leaders for heavenly power, knowledge, and connection, just because I was female.

I wrote page after page—hundreds of pages—in my scripture journals. I often copied scriptures like the monks of old, as if doing so would cause new meaning to spring from the words. At the same time, I read Stephen Hawking’s A Brief History of Time and other science books whose vocabulary captivated me: accretion disk, Schwarzschild radius, singularity. In class, a friend called me a “space dork” for passionately describing this new information about the universe; after that, I tried to curb my enthusiasm in public. But privately, as Mark Twain once wrote in a letter, I yelped astronomy like a sun dog and pawed Ursa Major and other constellations. My neighborhood seemed
small for my ambitions, and I began to chafe under rigid gender expectations.

Still, science conveniently seemed to confirm many of my religious beliefs. When new studies showed that beams of light could physically move small particles of matter, I considered it “proof” that Joseph Smith’s many heavenly visitors, who were often described as arriving in glowing pillars of light, knew how to ride the light rail, too. (Among these visitors were Adam, Abraham, Moses, Elijah, and Elias from the Old Testament; Peter, James, John, and Paul from the New Testament; Nephi, Mormon, Alma, and Moroni from the Book of Mormon; and, in the 1820 vision that started it all, God the Father and Jesus Christ.) My Sunday School teacher, a chemist, once said, “Of course Jesus could walk on water! He knew how to manipulate surface tension. If he wanted to, he could walk through walls by rearranging the empty space in atoms.” In 1992, scientists detected the pulsar Lich; it was not the first pulsar ever discovered, but it was the first observed instance of Earth-sized exoplanets orbiting another star. Maybe we weren’t crazy after all for believing in the planet Kolob or believing that God would eventually give to the righteous, as gods themselves in the afterlife, the power to create their own stars and planets. The first planet I would create, I decided one Sunday, would have variable gravity so I could hike up the highest mountain, throw myself off the top, and float gently back to the ground. I didn’t see my projected ascension to godhood and the creation of these new worlds as greedy, blasphemous, or delusional; I saw it as the natural birthright of God’s children, like a son inheriting his father’s business. It was a promise extended to anyone willing to come unto Christ—even women and (after 1978) anyone of any skin color.

Science and religion went hand in hand in many other ways. One of Joseph Smith’s revelations said that the elements are eternal, which meant Mormons had no quarrel with the law of conservation of energy and generally rejected the ex nihilo creation doctrine many other Christians believed. (We were flexible on the definition of a “day,” too, in the creation story, so the accepted geological age of the Earth, as defined by isotope-studying geologists, never clashed with Genesis; seven “days” might mean 4.5 billion years.) Neither did Mormons object to a universe filled with increasing disorder, as defined by the second law of thermodynamics, which says that any ordered system tends to dissolve into chaos over time. Hugh Nibley testified in Temple and Cosmos that it was only through Christ’s suffering, death, and resurrection that we could ultimately be saved from this degenerative process of entropy. God was the Creator, but he had to live by his own laws, too, so the idea of science opposing our religion seemed laughable.

And if non-Mormon archeologists hadn’t found incontrovertible evidence proving that the Book of Mormon was a true record from ancient American inhabitants, that was okay—maybe the archeologists were looking in the wrong places, or maybe God wanted us to live by faith and not evidence. The Book of Mormon itself contained multiple warnings for those who questioned God and demanded proof of gospel truths. In one epic confrontation, Korihor, an anti-Christ, goads the prophet Alma:

> And now Korihor said unto Alma: If thou wilt show me a sign, that I may be convinced that there is a God, yea, show unto me that he hath power, and then will I be convinced of the truth of thy words.

> But Alma said unto him: Thou hast had signs enough; will ye tempt your God? Will ye say, Show unto me a sign, when ye have the testimony of all these thy brethren, and also all the holy prophets? The scriptures are laid before thee, yea, and all things denote there is a God; yea, even the earth, and all things that are upon the face of it, yea, and its motion, yea, and also all the planets which move in their regular form do witness that there is a Supreme Creator. (Alma 30:43–44)

The very grandeur and complexity of the cosmos—despite its degenerative and destructive nature—bore witness of God’s power, before I had ever heard anything about teleological arguments, watchmakers, or David Hume’s *Dialogues Concerning Natural Religion*. Any argument against the existence of God meant that someone was looking for trouble and an excuse to sin. Doubt was the foil of faith, sent from the devil to weaken and confuse us. Already struck mute by Alma’s God-given power, Korihor goes begging for food and is trampled to...
death by a random throng of Zoramites. The lesson is clear: those who doubt, look out.

But I had few doubts in those days. (Too few, I think, which made my eventual disillusionment even more painful.) When my faith was challenged with new scientific information—new for me, anyway—Mormonism acted like the semipermeable membrane of a cell: the new information was either allowed to pass and assimilate into my worldview, or it was rejected as untrue and banned from being investigated further. The theory of human evolution? Yes, it could enter, albeit with trouble, since the Church had no official position on evolution but still culturally claimed white-skinned Adam and Eve as the first common ancestors of all humans. And what about the assertion that homosexuality occurs naturally in humans and is not inherently evil? No, not a chance; the leaders had made themselves clear on that point, although they have recently softened this stance in the wake of so many teen suicides. When I rejected facts because of my faith, I brain-tagged the information with the extremely useful title of “anti-Mormon,” a label liberally applied to things or people I didn’t like or didn’t understand.

Such a label could easily be applied to people in other religions, too. One day, outside a Christian convention downtown, someone handed me a pamphlet. It was the first of many “anti-Mormon” pamphlets I would receive from people trying to save me from my religion. On this particular pamphlet was an image of Jesus, his eyes replaced by flames, and beneath it was the word *sinner*. I did not recognize this angry Jesus. Why should this fire-eyed god be upset with me if I were trying my best to follow his teachings? The Jesus I knew was based on Greg Olsen’s calm, quiet paintings: the Savior wore soft robes and expressions and held lambs as gently as newborns. In church movies, Jesus sat and laughed with children and coaxed large monarch butterflies to land on his shoulder. The only time my Jekyll Jesus went Hyde was when people started commercializing his temple.

I threw the pamphlet away without opening it.

A good bus route was still in place, however. Descending the steep bus steps, I marched into the university’s cosmic ray research department and, with all the confidence my seventeen-year-old self could muster, told the program manager why he should hire me as a summer intern. I suspect he was more amused than convinced, but he hired me on the spot. Day one, on the conference room whiteboard, he began an overview of the project and my assignment.

“Cosmic rays aren’t actually rays—”

“They’re tiny particles that hit the Earth,” I interjected, wanting so badly to please.

“Very good,” he said. “We’ll just have a quick review, then.” He proceeded to bombard me with information as I wrote furiously in the large brown notebook he had given me: ultra-high-energy protons and iron nuclei, extensive air shower arrays, Cherenkov radiation, pions with neutral charges decaying to photons, isotropic scattering, atmospheric fluorescence detectors, photomultiplier tubes, photoelectric effect, GZK cutoff, the 1991 Oh-My-God particle (Oh-My-Gosh particle, I autocorrected in my head).

I struggled to keep up, but I was filled with awe. These were the mysteries of the universe, unfolding before me! I was at the forefront of astrophysics research! The manager gave me a place in the Undergraduate Slum, a largish cubicle with a scattering of computers, programming books, half-empty coffee cups, and half-groggy interns. My task? Create a set of computer programs that would convert one geodetic, or Earth-based, coordinate system to another. The end goal of Geolib, as we called the program, was to help full-time cosmic ray researchers more easily use our data to determine where ultra-high-energy cosmic rays came from. We—I liked saying “we”—had theories that they came from supernovae, magnetic variable stars, quasars, or active galactic nuclei, the powerful radiation surrounding the supermassive black holes at the center of galaxies. Here was my big chance to connect heaven and Earth through the scientific templum.

Stan, my direct supervisor, took me outside later that day with a surveying unit, a plumb bob, and a GPS device. In geodesy and cartography, he told me, a fixed reference point is called a *datum*. I squinted at him in the bright sun, trying to squint...
knowingly. Azimuth and elevation; an east, north, up vector system; GPS coordinates; an XYZ coordinate system with an origin placed anywhere you wanted, augur-style—these were all geodetic datums I had to connect mathematically in my conversion program.

"Which coordinate system do we most need for the cosmic ray data?" I asked him, pretending to know what I was talking about. Stan reached up to readjust his giant tinted glasses.

"Depends on what you want to measure."

Creating Geolib was not easy, but I did it. In my brown notebook, I drew many oblate ellipsoids skewed by various sets of axis lines without fully understanding what I was seeing. I actually used the trigonometry and pre-calculus I had learned in school. I tried to imagine what the Earth would look like as a geoid—a more accurate model of our bumpy, uneven planet—so we could measure surface elevations more precisely. I fell asleep on my keyboard trying to learn how to create an array of pointers in the C programming language. I ate an obscene number of Nutty Buddy bars. I asked the other undergraduates for help with partial differential equations and was frustrated by my inability to understand the math.

Whenever I’d banged my head against the mathematical wall for more than a few hours, I’d take my calculations to Stan’s cubicle. His desk was overflowing, mad scientist-like, with papers, folders, mugs with various levels of dark liquid, multiple computers, and assorted gizmos and gadgets, including a high-tech laser photometer. Stan was a conundrum: he’d never gotten a college degree, but he had worked for decades in astrophysics research for a reputable university; he was atheist, but he loved living in Utah. Sometimes we’d get sidetracked from our Geolib diagrams by intense dialogues about religion. I’d rib him about drinking coffee—forbidden to Mormons—and he’d retort that I was supposed to eat meat only in times of winter or famine, or didn’t I know my own Word of Wisdom scriptures? It turned out that Stan was a conundrum: he’d never gotten a college degree, but he had worked for decades in astrophysics research for a reputable university; he was atheist, but he loved living in Utah. Sometimes we’d get sidetracked from our Geolib diagrams by intense dialogues about religion. I’d rib him about drinking coffee—forbidden to Mormons—and he’d retort that I was supposed to eat meat only in times of winter or famine, or didn’t I know my own Word of Wisdom scriptures? It turned out that Stan was technically one of those ex-Mormons I had been taught to fear, but he was not like any kind of anti-Christ Korihor I had pictured: Stan had refused to attend church at the ripe old age of eight, when he felt pressured to proclaim in front of the entire congregation that he knew the Church was true. He didn’t know, he said. He could believe, he could even want to believe, but he couldn’t know.

“But there are many ways of knowing something’s true,” I countered. I talked about how God sends powerful experiences and feelings to those who ask in faith. This is great missionary experience, I inwardly crowed, spiritually patting myself on the back.

“I thought you weren’t supposed to seek for signs,” Stan responded. “I thought you were supposed to live by faith.”

“Well, the scriptures tell us to search for truth, and God’s willing to open the door if we knock. But the more we know, the more we’re responsible for, so it’s really an act of mercy if he withholds something we’re not ready for. Milk before meat, and all that.”

“Whatever you say!” Stan replied cheerfully, lifting his ever-present coffee mug to his lips. “I’m vegan, so I don’t want milk or meat. I’ll stick with coffee, thanks.”

“You’re so frustrating, Stan!”

He just grinned. “I think you mean Sa-tan. Now, get back to work. You’re going to kick ass in college if you keep working this hard.”

A more pleasant apostate you will never, ever meet.

ON MY EIGHTEENTH BIRTHDAY, one of my little sisters came clattering down the stairs to tell me that Paul, a boy from my physics class, was at the front door. I had begun to consider that black holes and boys were not mutually exclusive topics of interest after all, and I had developed a crush on him. Paul delivered two gifts: a burned CD of the NeverEnding Story soundtrack (Mormons love their cult classics) and a book by Richard Ingebretsen titled Joseph Smith and Modern Astronomy. I still have the book: the pages fall out no matter how lightly I try to turn them.

Ingebretsen was part of a cadre of Mormon science lovers who wrote books describing their grand unified theories of science and religion. These books were never official publications of the Church, but they still pervaded our discourse and occupied hallowed spaces on our bookshelves. "With his mind," Ingebretsen decrees on page one, "Albert Einstein reasoned what Abraham had been told by God thousands of years before. It took science over 3,500 years and the superb intellect
of Einstein to re-discover what Abraham knew.” I gobbled it up. A few weeks later Paul kissed me, and a few months after that he broke up with me so he could focus on preparing for his mission, as good Mormon boys were supposed to do. We remained friends, but the incident made me feel as if I were a wicked distraction from his more important priesthood responsibilities. Black holes were safer and less mysterious than boys, I decided, and I threw myself at my college textbooks.

AT THE AGE OF TWENTY-ONE, just before setting off on my own mission, I finally attended the Endowment session in the Jordan River Temple. More impatient than nervous, I entered the Endowment room, which looked like a small theater containing enough self-folding seats for least forty people. Women were directed to sit to the left of the central aisle, men to the right. I sat in the front row on a chair cushion the color of desert sage, which matched the floor-to-ceiling curtain at the front of the room. My mother, settling in beside me, was dressed as I was, in a long-sleeved white dress and white slippers. I wiggled my toes in the slippers; they made me feel like I had satin clouds attached to my feet.

A portly man dressed in a white suit stood calmly but unsmilingly at a simple altar in front of the enormous curtain. When everyone was settled, he pressed a few buttons to start the audio recording of the presentation. After a deep masculine voice announced the importance of the ceremony, the lights dimmed and a large screen at the front of the room descended. The video presentation of the creation story from Genesis was so beautiful I wept. Later, I would experience the same awe as I watched the new Cosmos series with Neil deGrasse Tyson and BBC’s Human Planet and Planet Earth II documentaries. They all shared sweeping landscapes, close-ups of flowers and animals, and music that created visceral physical responses down my spine and across my skin: a divine feeling, whether sent by a divinity or not. The Earth we have, lumpy and asymmetrical though it may be, is ours, the pale blue dot over which we can be better stewards.

A sense of overwhelming reverence is something both science and religion can provide. Both proffer to their acolytes the notion of the sublime, as preached by the Romantic poets. An eighteenth-century German philosopher and gardening enthusiast, Christian Hirschfeld, defined the sublime as seeing our own potential in the grandeur of nature and its many landscapes, which are outward symbols of our many inward human realities. The poet William Wordsworth considered the sublime to be the mind trying to “grasp at something towards which it can make approaches but which it is incapable of attaining,” a mood where mystery’s burdens and “the heavy and the weary weight / Of all this unintelligible world, / Is lightened.” This is the mood I have felt in singing praises to God, scanning poetry, snuggling with pets and people, studying planets. In his book Truth and Beauty, Subrahmanyan Chandrasekhar, an Indian American astrophysicist who won the 1983 Nobel Prize for Physics for his work on the physical configuration and evolution of stars, also wrote of the human need to search for the sublime:

This “shuddering before the beautiful,” this incredible fact that a discovery motivated by a search after the beautiful in mathematics should find its exact replica in Nature, persuades me to say that beauty is that to which the human mind responds at its deepest and most profound.

The subsequent parts of the Endowment ceremony were less awe-inspiring for me. Painful childbirth and patriarchy (Genesis 3:16) seemed a heavy price for Eve’s sin of eating a piece of fruit in search of knowledge. Hand in hand, Adam and Eve were expelled from the Garden of Eden into a lone and dreary world with the promise that if they were obedient, they could return to God’s presence. The white screen ascended back into its slot in the ceiling, and we were asked to put on special temple attire over our clothes, each item signifying spiritual progress toward God in some way. It was strange, but I clung to what my grandma had said the day she purchased my temple clothes for me: whenever I donned the symbolic temple clothing, she said, she wanted me to feel wrapped in God’s love and her love. When prompted by the masculine voice, I bowed my head and covenanted to be faithful to my church and its teachings. If I broke those covenants, I risked losing my place with my family in the afterlife. We were then allowed to pass by a
curtain into the Celestial Room, which contained a glorious three-tiered chandelier and stately chairs and couches fresh out of a high-end furniture magazine. Copies of the scriptures, tissue boxes, and impressive flower arrangements stood on ornate end tables. We were encouraged to reflect on the ceremony, to commune with God in private prayer, and to whisper if we needed to speak to others. I felt relieved we could sit by the male members of our families again.

Slightly disappointed by the ceremony but still wanting to share the sublimity I had felt, I set off on my mission. As a Spanish-speaking missionary in Toronto, I often talked to passengers on subways and buses: a captive audience. It was my first step into the wider world, and how wide it was! On just one bus ride I’d talk to immigrants from China, Peru, Ghana, Ukraine, Mexico, and Afghanistan. Our mission president asked us to visit Spanish-speaking church members who had fallen away and invite them back to the fold, and in our missionary lessons with them in their homes, I often used an analogy: if a train is heading to the place you want to go, and a fellow passenger steps on your toe, are you going to get off in a huff and deny yourself your destination? If the Mormon Church is the train, heading toward eternal happiness, why would you ever disembark?

I had many faith-affirming experiences, but some moments were terribly destabilizing, the kind of feeling you get when your subway car breaks down in the tunnel and the lights flicker on and off. Late one afternoon, my mission companion and I were out knocking doors through a neighborhood of run-down townhouses. I had fasted all day in the summer heat to be worthy enough to find someone who would listen to us, and I was weak from hunger and thirst. We noticed a man in a black turban walking by; we gave him a card for our free English class but did not try to engage him in conversation. We had just started talking to some teenagers in a driveway when a woman came barreling out of the house, screaming that she was a proper Christian and ordering us off her property.

We apologized and immediately crossed to the other side of the street. Shaken, in tears, I was trying to compose myself when the man in the turban came back and said, in excellent English, that he had seen what happened. He kindly invited us to dinner with his family. His smiling wife greeted us at the door and introduced us to their young son. The small apartment boasted little fancy furniture but was clean. The family had emigrated from the Middle East, and together, at a low table, we ate basmati rice, vegetables, and fruit. They were not interested in our religion, but their kindness demonstrated a principle that religion teaches better than science: to show goodness and mercy where none is required. The son shyly showed us his detailed Basmalah calligraphy, which formed an image of a child praying. As we thanked them for their generosity at the door, the boy gave me the drawing.

The incident troubled me: of course I knew there was goodness elsewhere in the world, outside Utah, outside Mormonism, but here was a family who didn’t need what I was offering, a family—and the thought felt blasphemous—who didn’t need saving. Throughout all the years that followed—returning from my mission, kneeling at the altar with my husband, Andrew, in the Jordan River Temple, graduating in English instead of Physics, editing science books and articles, giving birth to my son (all the while cursing Eve’s curse), moving from country to country for Andrew’s work—I kept the boy’s picture.

IN THINKING OF ALL THE PEOPLE I have met, I find it difficult to lock down any philosophical axiom concerning science and religion. I can do so only from my very particular—some may consider it singular—point of view and set of circumstances. The more stories we hear, however, the more I believe we will begin to see guiding constellations in the metaphysical sky.

I have recently been fascinated by Isaac Newton and his particular circumstances. Abandoned by his mother at the behest of his new stepfather, Newton spent hours alone on his grandmother’s farm creating makeshift sundials. In his solitude, as James Gleick said, Newton made knowledge “a thing of substance: quantitative and exact.” Newton’s epitaph, written by Alexander Pope, is most fitting:

_Nature and Nature’s Laws lay hid in Night:_
_God said, “Let Newton be!” and All was Light._
When he was nineteen, Newton meticulously catalogued his sins, one of which was “Wishing death and hoping it to some.” Despite his sins, he believed he had been chosen by God to interpret the Bible, so he spent more time trying to find hidden meaning in the scriptures than trying to decipher the physical universe. One of my science writing students this past year argued that Newton would have accomplished much more had he not been so isolated in his religious pride. To play devil’s—or maybe heaven’s?—advocate, I countered with the idea that maybe Newton’s religious beliefs had actually given him the drive and focus to discover the laws of nature. We can only conjecture.

We may even find that there need be no quarrel at all between some aspects previously regarded as sore points between science and religion. As Alan Guth, an American theoretical cosmologist, said, “The big bang theory is not really a theory of a bang at all. It is really only a theory of the aftermath of a bang. … But the standard big bang theory says nothing about what banged, why it banged, or what happened before it banged.” Georges Lemaître, who first proposed the idea of the Big Bang, was not only an astronomer and a professor of physics but also a Catholic priest, and in the past few years, Pope Francis has openly supported the Big Bang theory and evolution, as well as the need to combat climate change. Our primary war is not against science or religion; it is against the forces of nature, including human nature, that diminish our capacity to feel the sublime in its many incarnations.

I had the chance to visit Hugh Nibley himself shortly before he died in February 2005. He was lying on a bed in his living room, propped up by pillows. Books lay all around him, on his bed and in stacks on the floor. My old friend Paul, who accompanied me, asked Nibley if the Mormon Church was true. Nibley’s answer, on his deathbed, was the same phrase Mormons use to describe their belief in the Christian Bible: “As far as it is translated correctly.” As I look back now, Nibley’s riddle-like answer seems laced with sadness, as if the birds of the heavens were not as reliable as he wanted them to be.

In 2013, my little family of three moved to Montreal for Andrew’s work, and we were quickly and lovingly integrated into a wonderful congregation. But two decades of studying Mormon doctrine and how it was practiced began to cause friction between my desire to be honest and my desire to be loyal. After investing so much in Mormonism, it was uncomfortable for me to realize how many members and leaders of the Church had, Newton-like, taken their personal translations of the scriptures and were preaching them as doctrine over the pulpit. I was also frustrated by the impotency I felt as a female leader in the Church. After practicing job interviews with the young women in my congregation, I was chastised for not focusing enough on teaching the girls to become dutiful wives and mothers. I was willing to stay in the church and fight this gender war, however, and I began meeting with my bishop and other male leaders to try to explain how benevolent sexism was still sexism, and still harmful. They listened patiently but told me they could change nothing.

That July, in a small town three hours east of our apartment, a train accident caused massive explosions, killing forty-seven people. The news unfurled images of giant plumes of black smoke, billowing mushroom balls of flame, and people shouting, “Mon Dieu! Mon Dieu!” as those behind the camera alternately ran toward the inferno for a better view and ran away in terror. We learned that the engineer had parked the train, seventy-four cars long and carrying millions of liters of petroleum crude oil, on an incline in Nantes, seven miles from Lac-Mégantic. Unfortunately, he did not set enough hand brakes on the cars, and the gravity of the incline overcame the friction of the brakes. The unattended train picked up speed as it went, and finally derailed at a curve in Lac-Mégantic. About half of the buildings in the area were destroyed, and nearly all the remaining buildings had to be demolished because of petroleum contamination.

Only months later, my own spiritual engine set out on a crash course to the center of my soul. My concerns about gender inequality, a God who sanctioned polygamy but not homosexuality, and doctrinal inconsistencies in our scriptures became more important than my fear of spiritual and social consequences. The last hand brake broke when I read In Sacred Loneliness: The Plural Wives of Joseph Smith, by Mormon historian Todd Compton, which derailed my faith in Joseph Smith altogether.
and—although I neither expected nor desired this outcome—my faith in God.

In January 2014, I visited the Palmyra Temple in New York with my husband. The temple overlooks the Sacred Grove, where Joseph Smith said he saw God. Inside the Celestial Room, sitting on the white couches under a white chandelier, as light streamed in from the glass windows, Andrew and I decided to leave the faith. We left the temple hand in hand, ready to face the lone and dreary world together.

**THE SUDDEN VERTIGO** caused by this decision was almost Copernican in nature for me—that is, leaving Mormonism was like believing that Earth is the center of the universe, then suddenly discovering it is an uneven chunk of rock rotating, as physicist Richard Feynman said, like a spit in front of a great fire. Comforting certainty has been replaced with ambiguity and nuance. Some of my friends and family believe I’m lost in my intellectual pride, deceived by the devil, and destined to be punished for seeking out the fruit of forbidden knowledge.

When I called my dear high school friend Brent on the phone, fearful he had also shut his heart against me, we talked earnestly for five hours, and I felt nothing but compassion from him; he then showed it by flying out to Montreal with his wife to visit us. Other family members have also loved us through the whole ordeal, as have friends who revealed they had left the faith long ago but hadn’t told anyone for fear of social retribution. I am fortunate to still feel wrapped in my grandmother’s love. It takes time to put out the fires, clean up the mess, and rebuild, but we are doing it.

In July 2015, I emailed Stan to say I was flying in to give a presentation at the University of Utah on my new anthology of essays by twelve Mormon—and formerly Mormon—women. I told Stan I’d love to see him while I was there, and he was one of the first in line at my book signing. After the presentation, I asked to see my old cubicle in the Undergraduate Slum, which hadn’t changed much in a decade. Over cups of coffee and meatless salads for lunch, Stan told me that Geolib was still being used by researchers to convert one set of coordinates to another, and that the programs had been very helpful to them through the years. Something settled in me when I heard this. I wasn’t a world-renowned scientist, but I had contributed. Now, teaching astronomy and science writing to students in Nicaragua, I find great meaning in sharing the current knowledge we have about the cosmos. The school roof, where we host our star parties, has become my new templum. As I align the crosshairs of our school telescope on Jupiter, or Saturn, or Venus, or other planets named after gods, I feel tethered to heaven in a new way. That optical “Engine” of the astronomers, as John Donne calls it, is my students’ conduit to the heavens, an *axis mundi* as meaningful and as centering as the pagan Callanish stones of Scotland, a Mount Meru mandala from China, the unit circle on a Cartesian plane, or a Christian cruciform halo.

The fact that Polaris will not always be our North Star seems deeply symbolic to me now. Because of axial precession—the slight wobble of Earth’s axis—over the next thousand years, Polaris will gradually be dethroned, and Gamma Cephei, a star in the constellation Cepheus, will take its place as the North Star. The Big Dipper on the Salt Lake Temple will look strange and out of season. Constellations will change. The Milky Way and the Andromeda galaxies will merge. The firmament, in both the physical and metaphysical sense, is not firm after all.

Emerson once said, “There are no fixtures in nature. The universe is fluid and volatile. Permanence is but a word of degrees.” I find a strange stability in the idea that nothing is stable or fixed—not the stars, not even the universe itself. As uncomfortable as uncertainty is, it begets a healthy humility and the need to acknowledge margins of error in all our calculations, in all areas of life. Uncertainty can inspire us to keep searching for answers.

I now draw my own *urbs quadrata* from which to measure and gauge the universe, but birds that have lost their prophetic gifts are nevertheless respected and appreciated. Although Mormonism is no longer my system of orientation, I still love my people, and I applaud and support their belief in the Jesus of lambs and butterflies. The world will be a better place for it. Despite our theological differences, we are aligned in purpose as we train our eyes on the heavens—to seek out the sublime, the things we both fear and adore, and to share our shuddering with a world in great need of both humility and inspiration.
Under the Stars

SYLVIA SUKOP

THE FIRST TIME I approached Nurit*, she was leaning against the wall with a dessert plate in her hand. Cookies and sliced fruit and occasionally birthday cake with rainbow-colored icing were staples of the social hour that followed every Friday night service at Beth Chayim Chadashim. It was called the oneg, a Hebrew word for “joy”—aspirational, like the tribe of single queers it attracted alongside the already partnered.

For me, joy did not come naturally, but hung back, had to be coaxed from its hideout gradually, a fact that was not obvious, for I moved through the world with a joyful façade. People loved my sunny disposition, which seemed especially pronounced in Jewish contexts. I was the unencumbered Jew, unburdened by grim history, by grandparents murdered, by deeply ingrained distrust. I was open and eager to connect, any cautiousness mainly the residue of habitual self-doubt and prior disappointment in love.

Born in Israel, Nurit had grown up in Brazil, where her family had moved when she was nine. Now in her late twenties and...
new to the United States, she was in the first flush of exploring her gay identity and had found our synagogue by googling “gay + Jewish + Los Angeles.” I had noticed her coming to Friday night services that summer. She was petite, full around the hips and breasts, her mischievous brown eyes accented by black mascara. Her dark hair was stylishly cropped, and she wore low-cut tops and tight, tailored suits, buttons straining at their holes. Her voice, the first time you heard it, came as a complete surprise: from her look, you expected sultry sophistication—Marlene Dietrich—but what you got was Betty Boop.

“You’re getting to be a regular,” I said to her, trying to sound casual, repeatedly dunking a lukewarm tea bag in my paper cup.

She returned my smile and, in between bites of a juicy red strawberry pinched between her fingers, asked, “So, would you like to combine with me?”

“In Portuguese, we say _combine_ , to make a plan.”

“Oh, yeah,” I said, finally getting it, “let’s make a plan!” And we both laughed.

Linguistic differences notwithstanding, I had not expected Nurit to be so interested and so forthright. I mean, there were plenty of other women in the room closer to her age. I was in my late thirties, had come out as a lesbian two decades earlier, and was in the final stages of study for my conversion to Judaism. Most Fridays, coming from work, I dressed in soft-butch business casual, with short blondish hair, glasses, and never any makeup.

“How about a hike?” I said. “We could take my dog, Tikva. I’ve only had him a few months, and we like to try new places.”

“Oh, I love dogs!” she squealed, which I found out later was not actually true. But we made a plan to meet that Sunday. I’d pick her up outside her apartment in Westwood, and we’d drive to Topanga Canyon.

When Tikva and I pulled up, Nurit was waiting on the sidewalk in sporty polyester shorts, a crisp white T-shirt, and socks pulled up to her knees—outfitted more for a soccer match back home in São Paolo than a hiking trail in the Santa Monica Mountains. But she was excited and chatty, and I enjoyed listening to her heavily accented English; it reminded me of my immigrant parents.

Nurit was an old Jewish soul of Russian descent, a seductive mélange of melancholy and moxie. She spoke three languages—Hebrew, Portuguese, and English—and had also mastered the modern hieroglyphics of physics and astronomy. Nurit and her twin sister grew up in Tel Aviv, literally on Einstein Street, and physics was the family religion in which father, mother, and both daughters would become ordained, all four earning the PhD.

A post-doc appointment at UCLA in astronomy and physics had brought Nurit to California, and she would soon be hired for a research position at NASA’s Jet Propulsion Laboratory. She was ambitious and knew her stuff. But at the same time, she could be sweetly naïve and childlike, and I was drawn to her madcap charm. She collected stuffed animals and delighted in cartoon characters like Calvin and Hobbes and Mowgli the Jungle Boy. She idolized an incongruous pair of Greek divas, the opera singer Maria Callas and the television fantasy heroine Xena, Warrior Princess. And the first time she saw the hand-painted placards along Hollywood Boulevard hawking “Star Maps,” she found it remarkable that residents of Los Angeles should take such an avid interest in astronomy.

Nurit told me the story of standing at age seven at the open window of an apartment in Germany, where her father had taken the family during a visiting professorship. She lifted up her shirt and shouted at the top of her lungs, _Puuuuuppiiiiiiik!_ Pupik, the Hebrew word for “bellybutton,” meant nothing to German passersby, but to her it was the pinnacle of transgression, a guileless up-yours to the whole former Third Reich.

My mother was German, but Nurit took that too in stride and gave me the nickname Schnitzel, to her own permanent amusement.

Because Nurit was so voluble, I could do what I did best—quietly observe and appreciate a vivid personality in full flower. Meanwhile, she liked my introspective nature and emotional restraint. Each of us, it seemed, was seeking something the other had.

THAT SAME FALL, when I was falling for Nurit, my youngest brother was three months into a cancer diagnosis—colon cancer, very rare and very deadly in teenagers. Alex was nineteen years old and living on an organic farm commune in
the Pacific Northwest, and on Memorial Day weekend, he had been rushed into surgery straight from the E.R. to remove a tumor that blocked his intestine, leaving him with a colostomy in his lean young abdomen. The emergency over, he went back to live and work on the farm in remarkably good health and spirits through the summer. I had been flying in and out of Spokane from L.A., savoring every moment in a parallel universe, off the grid and close to the land with my brother.

Several months before Alex’s diagnosis, Beth Chayim Chadashim’s Rabbi Lisa Edwards had introduced me to one of the morning prayers, the Asher Yatzar, giving me a photocopy with three versions of the text (English, Hebrew, and Hebrew transliteration). Like most rabbis, Lisa didn’t proselytize, and she waited until I’d asked for it. For me, becoming Jewish had been a six-year endeavor that included a practicum. I had taken classes, read books, found a rabbi; I joined the temple even before I’d completed my conversion. But it was only in the final year of my studies that I felt ready to begin saying daily prayers.

One of the first prayers of the day, the Asher Yatzar is traditionally recited after going to the bathroom. In this seemingly unholy moment, the prayer begins by praising God for the miracle of the human body, for the creation of its “openings and vessels.” It continues, “If one of these passageways be open when it should be closed, or blocked up when it should be free, one could not stay alive or stand before you.” The prayer concludes by acknowledging that God gave each of us a pure soul, breathed it into us and someday will take it from us—“restoring it to everlasting life.”

This prayer, I later realized, spoke with eerie precision to the possibility of a blocked intestine and how it could lead to death. It encapsulated the entire experience I would soon go through with Alex.

Though I was already well along on my path to becoming Jewish when we met, Nurit imbued that endeavor with a verve and coziness—a heymish-ness—I hadn’t felt before. Because she was only nine when she moved from Israel to Brazil, Hebrew for her was permanently honed, filtered through the wide-eyed wonder and open-heartedness of early childhood.

That September, Nurit and I sat together in the sanctuary during Jewish New Year services led by Rabbi Edwards—Rosh Hashanah, the first of the Ten Days of Awe. I was entranced by Nurit’s small fingers moving across the pages of the prayer book, whose Hebrew letters, as impenetrable to me as Braille, she read fleetly. Leaning into me, she would share her special take on one phrase or another.

In the Mi Chamocha prayer, for example, she reveled in the notion of God as superhero, a biblical Captain Marvel. Who else is like you, oh Lord, among the gods? the prayer goes. Who else performs such miracles?

“No one!” Nurit squeaked gleefully into my ear.

JUDAISM, A FAITH of outsiders, seems fundamentally concerned with loneliness—anticipating, preventing, and assuaging it. Jews mourn not in isolation but in a minyan, a group of at least ten. A book of scripture is never left lying open in an empty room, for there should always be someone there to read and interpret it. During the traditional Sabbath blessing over candles, wine, and finally bread, a cover is placed over the bread until its turn comes, lest it should feel left out. In many Hebrew blessings, the plural is favored over the singular. L’chayim, for example, often translated as “To life,” literally means “To lives”—because one life by itself would be no blessing at all. The formation of lasting couples, families, and communities remains one of Judaism’s most cherished values.

Nurit’s understanding of astronomy and physics recognized a similar tendency toward something like communal bonding. Standing in pajamas in my kitchen one morning, while I prepared cereal and coffee, she explained that planets and stars occur in clusters—cosmic shtetls—from the time they are born to the time they die. The same is true for miniscule forms of matter—electrons faithfully orbiting the nucleus, for example, and neutrinos, tinier still and nearly impossible to detect, eternally emanating from Sun to Earth.

“They want to be together,” Nurit said earnestly, giving herself a hug, modeling the concept that everything in the universe clings to, huddles with, something else. “They don’t want to be lonely.”
FOR MANY PEOPLE, Jewish liturgy could be one long, keening lamentation, especially during the Days of Awe. It’s when Jews, as a people and as individuals, express their deepest sorrows, regrets, and mortal fears; the ritual can bring even the most secular, assimilated Jew to tears. The Unetaneh Tokef prayer stands out as one of the darkest prayers in the holiday liturgy: “On Rosh Hashanah it is written and on Yom Kippur it is sealed, how many will pass from the earth and how many will be created; who will live and who will die; who will die at his appointed time and who before his time; who by water and who by fire, who by sword, who by beast, who by famine, who by thirst, who by storm, who by plague, who by strangulation, and who by stoning.” And so on.

But for Nurit, the sound of Hebrew, the sight of its letters dancing on the page like barefoot children, invariably evoked sweet memories. Hebrew was the cooing voice of bedtime, of her parents tucking her in and reading her stories. Hebrew made her laugh and sing and showed her God’s gentleness.

The prospect of losing Alex weighed heavily on me (who by cancer, I added to the mournful litany), and Nurit, probing her heavens filled with light, helped me to bear it.

FROM NURIT, I learned the difference between theoretical and applied physics—and, by extension, theoretical and applied anything, from faith to farming to photography—and the distinct personality types that gravitate to each type of field. Theoretical physicists, she said, were misty-eyed dreamers and poets, luftmenschen, who live in the airy realm of the imaginary, of what might be possible, whereas applied physicists were earthbound “engineering types,” limited by what’s already known and proven, pragmatists utterly lacking in romantic qualities.

Needless to say, Nurit landed squarely in the “dreamer” camp. At the time we met, she was developing potential models of conditions at the farthest edges of our solar system, where at that time no space probe had ever reached. To me her work, entirely theoretical, was the stuff of poetry—“piercing a hole,” she said, “in the curtain that separates us from the rest of the galaxy.”

WHEN PEOPLE ASK ME why I converted to Judaism, I often find myself, like the priests I grew up with, drawing a cross in the air. I use it to explain how I think of religion. On the vertical axis, there’s the notion of a divine and powerful being “up there,” and on the horizontal axis, human beings living and working together “down here.” The horizontal axis interests me most. It’s where, I believe, the presence of God or God-ness or goodness is manifested through human compassion, intention, discipline, and action.

As a Catholic boy who came to embrace Quaker ideals and practices, Alex was always fully committed to this horizontal dimension. Even as he faced his own mortality, he seemed able to shrug off the vertical, with no expectation of an afterlife. I have no need to set my soul straight, he wrote in his journal late in his illness. I don’t think I anticipate the existence of a heaven or hell, nor some superior being to determine which I am suited for. Perhaps my spirit, or some form of my consciousness, will live on. I hope so. But not in the way that there’s a place for the good ones to go, and then another of punishment for the undeserving.

In October, Alex had a second operation, this one planned. The goal was to turn my brother back into a normal boy by reversing the colostomy, reconnecting the intestine, and restoring normal bowel function. But on opening up his anesthetized body, the surgeon discovered rampant tumor growth, not only in the colon but in the liver, too. The operation was quickly aborted, and my brother was sewn back up. We learned that Alex had only weeks to live, and a new reality to live with: a permanent intravenous line in his left forearm delivering Total Parenteral Nutrition, or TPN, a vitamin-fortified sugar and salt solution, a baby bottle poured into a vein. It’s how they feed comatose patients and premature babies and others who cannot eat and digest normally. Until then, the one thing Alex could do—and relished—was feed himself from his own bountiful harvest. Cutting this farmer off from his food was cancer’s ultimate insult.

I sometimes picture the scene very differently. My brother is not lying down in the surgical theater; he is standing. Ever helpful and eager to learn, he’s holding up the flaps of his own abdomen for scientific inspection, as in one of those seventeenth-century anatomical drawings.
illuminating the darkest mysteries of the human body. He is neither frightened nor angry. He speaks. And he invites me to look even closer.

**A CRUCIFIX HUNG** above Alex’s hospital bed like some lurid, anatomically correct model of my brother’s tortured body, complete with abdominal gash. On the first day after his surgery, in a plucky gesture of nonviolent resistance, his friends decked the cross in a colorful blanket of autumn leaves. But by the second day Alex requested its removal from his room altogether.

Soon after the crucifix came down, the hospital chaplain came to check on Alex. Another professional making his rounds, taking the spiritual temperature of the room, he hadn’t come to pass judgment. He asked Alex how he was doing, but Alex had no energy to talk, and the chaplain didn’t push.

“T’m here if you need me,” he said, glancing around the hospital room, crowded with medical equipment and a grim-faced assembly that included my sixty-six-year-old father and me. My father wore the same clothes he had since arriving from Florida, a drab windbreaker and baseball cap he left on even indoors. He looked drained, distant, barely able to maintain eye contact from behind his heavy bifocal glasses, whose upper and lower halves offered equally disconsolate views of what was happening to his son, and to him.

“You must be Alex’s father,” said the chaplain, looking more like a college professor than a minister in his corduroy jacket and button-down shirt. The low murmur of pumps and monitors helped mask the painful silence.

“Maybe you’d like to talk?” he asked. “We can step out into the lounge.”

My father, seeing that Alex had dozed off again, nodded, and the two of them headed for the door. “I’d like to come too,” I said, and followed them down the hall.

My father was a small man, a couple of inches shorter than my mother and I, but big-hearted, a charmer of little kids and grandmothers, of waitresses, nurses, and nuns. He’d had his first heart attack at forty-two and, besides the heart attacks, over the next twenty-five years he survived a life-threatening heart infection, heart-valve replacement with that of a pig, emergency quintuple bypass surgery, a defective pacemaker, and finally congestive heart failure with its literal enlargement of the heart.

That Alex lay dying of cancer at nineteen, as my mother had at fifty-five, while my father continued to beat the odds was an ongoing shock to him and to the rest of us.

“Why Alex and why not me?” he sometimes lamented out loud.

Had I ever wished I could give my life to save Alex’s? Parents of gravely ill children seem to do so as a matter of course. I never did. I loved life and wanted to keep mine; Alex loved life and I wanted him to keep his, too. Trading was not a viable option, anyway. Each of us has a life to live—“the given life, and not the planned,” as Wendell Berry, Alex’s favorite author, wrote—and wishing it were otherwise seemed pointless.

In a private corner of the visitors’ lounge on Alex’s hospital floor, the chaplain and my father sat face to face, and I pulled up a chair at my father’s side.

“I know how hard all of this is for you,” the chaplain began, “but what’s your biggest concern, right now, today?”

Speaking the unspeakable, my father’s answer came slowly, in his baritone voice and Hungarian accent, which suddenly seemed thicker to me. “My son. He’s so sick. He doesn’t have much longer.”

In the pause that followed, it was all I could do not to rush in with words. But I followed the chaplain’s lead.

“He’s a good boy,” my father continued, his vowels lengthening, consonants hardening. “He was always a good boy. But I am worried.”

The chaplain understood before I did. My father’s biggest fear was that if his child did not receive the final blessings of the church, despite having lived a good life, he would be barred from heaven, and thus prevented from joining his mother, who waited there for him. In my father’s mind, this would be a punishment worse than death.

Finally, the chaplain spoke. “Your son is in God’s hands,” he said with reassuring authority.

My father stared down at his own pale hands folded limply in his lap. The gold wedding band on his left hand had joined him to his new wife back in June, but it must also have reminded him of the wife he had lost, the mother of his seven children.
“He’s going to be okay,” the chaplain said. “God is going to take care of him. You don’t need to worry about that.”

Like an absolution, the chaplain’s words seemed to release my father from at least this one fear, and in letting it go, my father began to cry quietly. I was crying, too, and pulled tissues out of my bag for both of us.

IN THE HOSPITAL CAFETERIA, a low-ceilinged windowless place, the bottom-most stop on the elevator, my father and I talked over cups of hot tea, to which, had we been home, he might have added a shot of rum.

Having grown up in a German-speaking village in rural Hungary ultimately taken over by Communist Russians, my father spoke three languages by the time he turned fourteen. After the war, his family’s farm was confiscated, and, stripped of nearly all their possessions, they were forcibly resettled. As a teenager, he’d somehow found the clarity, the will, and the courage to leave. He fled, alone, across the closed border, risking arrest or even death, and after a series of close calls finally landed in a refugee settlement in Germany.

Now, by turns wistful and animated, my father began telling stories of his childhood. One that I had never heard before centered on his favorite Christmas present, a wooden rocking horse.

Contending with war-time deprivation, his parents would give him the same rocking horse year after year. What thrilled him then and still did—his eyes brightening at the memory—was how every Christmas the rocking horse reappeared with a fresh coat of paint and a fresh straw mane that made it new again.

He loved that horse, and I loved the story, and the tender uplifted place it opened in my father when he told it, and in me as I listened.

“When you were little I bought you a rocking horse for Christmas,” he continued, “but you only wanted to play with the box!” Laughing hard, we must have been the loudest people in the cafeteria.

Back in L.A., I told Nurit the story of Dad’s rocking horse, and instead of being moved like I was, she grew silent. Slowly, I drew out the explanation. From her perspective, the story was not one of imaginatively overcome hardship—on the contrary, there was no grievous hardship, because they lived.

When each year’s holiday came around again, the family was still there, still alive, still together. Her anger, deep and unyielding, was directed partly at me for the sympathy I felt for my father.

She was right, of course: By the time my father was ten years old, Jewish families in Hungary were vanishing by the day, rounded up, deported, executed. For Jewish children, holidays and toys and wonderment did not exist even in tatters.

The given life. The lives most brutally taken.

ALEX WENT BACK to the farm, and I joined his friends and hospice team in a dedicated circle of care around him. When he could no longer walk, we carted him out to the fields in a wheelbarrow. When he could no longer eat, we brought him fresh snow to melt in his mouth. When he could no longer speak, we still listened. In just six months he’d gone from being my baby brother to becoming my ancestor. His bedroom—lined with his harvest, jars of fruits and grains, and herbs hung from the ceiling to dry—had become a tomb packed with supplies for the journey to come.

On the last night of his life, Alex sat upright at the edge of the bed, his feet dropped to the wooden floor, restless and repeatedly trying to stand up though he didn’t have the strength to. I quit trying to talk him out of it; I just wanted to be close. I slid onto the bed behind him, pressing my chest against his back and wrapping my arms and legs around his. I whispered in his ear that I knew he wanted to go and that he could go. And with one last grunt of an exhalation, his body collapsed into mine.

Nurit had been traveling throughout the fall, presenting her research at international scientific conferences. She didn’t come to the farm until mid-December, two days after my brother died, and it was an awkward visit. I was physically and emotionally spent from the final days and nights with Alex and his closest friends, and the accommodations, with no plumbing or electricity, were a bit rustic for Nurit’s taste. But I prepared the outdoor tub for her, heating the water on a wood-burning stove. Shedding a large towel, she sank into the steaming bath. Her skin, whole and smooth, glistened under the crisp night sky brimming with stars, even the closest ones trillions of miles away. I pulled my coat tighter, watching her watch them.
"Taking on the wreckage," Sascha Feinstein writes of the overwhelming, impossible legacy of junk the artist and hoarder who raised him left behind, “meant taking on my father.” This book is his accounting: desperate and funny, horrifying and artful, and much less bitter than it had every right to be. If the father’s legacy suffocates, his son’s accomplishment is to find not only room to breathe, but the gifts and challenges that launch a young writer on his way. The buoyancy required to survive a father’s excess becomes a son’s source of strength, enabling him to build—with the good help of poetry, jazz, and the movies—a self and a family, and even to restore a nearly ruined house to radiant life.

— Mark Doty, author of Heaven’s Coast

To order visit www.rowman.com
or call 1-800-462-6420
Save 30% with code UP30AUTH17 (not valid on eBooks)
$35.00 cloth / $33.00 eBook

Firm deadlines and professional guidance to help you produce your best work

ONLINE WRITING CLASSES at Creative Nonfiction

4- 10- OR 12-WEEK CLASSES BEGIN IN
JANUARY, MARCH, JULY & SEPTEMBER

Enroll at: www.creativenonfiction.org/online-classes
Standing before a crowd of listeners in 1914, the fundamentalist preacher Billy Sunday took a few moments to ridicule science’s pretensions of being a new salvation. “People are dissatisfied with Philosophy and Science and New Thought as panaceas for heart-aches!” he cried:

It does not amount to anything, when you have a dead child in your house, to come with these new-fangled theories … Let your scientific consolation enter a room where the mother has lost her child. Try your doctrine of the survival of the fittest. Tell her that her child died because it was not worth as much as the other one! … And when you have gotten through with your scientific, philosophical, psychological, eugenic, social service, evolution, protoplasm and fortuitous concourse of atoms, if she is not crazed by it, I will go to her and after one-half hour of prayer and the reading of the Scripture promises, the tears will be wiped away and the house from cellar to garret will be filled with calmness like a California sunset!
Billy Sunday was not known for nuance; a journalist once described a Sunday sermon as “the most condemnatory, bombastic, ironic and elemental flaying of a principle or a belief that [he] ever heard in [his] limited lifetime and career from drunken fist fights to the halls of congress.” The contrast Sunday describes is indeed stark: for someone faced with the death of a child, science leads to despair and madness, while Christian faith leads to a deep sense of peace. Though hyperbolic, Sunday’s condemnation of what he presented as scientists’ claims to provide both salvation and solace efficiently—even eloquently—captured profound, long-standing tensions between the promises of Western science and the obligations and goals of Christian faith.

I have taught courses on the history of science and religion, evolution theory, and medicine for more than a decade now. But although it is my job as a historian to try to understand the complex factors behind positions and beliefs, I never quite grasped what might be at stake in Sunday’s belligerent sermon against science—and, indeed, in the long-running debates among fundamentalists, modernists, and atheists—until a few years ago, when I witnessed the struggles of dear friends during the illness and loss of their six-month-old baby girl. Claire was born with a congenital condition that meant her heart and liver could not function properly. Surgeons made four attempts to repair the broken pump, the clogged filter, and the missing tubing; all ultimately failed.

In many of my classes students learn about modern science and medicine’s beginnings in seventeenth-century mechanical philosophy. Thinking of the body as analogous to a machine led not only to arguments about God as the Designer but also to the idea that broken parts might be fixed through surgery. That foundation has led to many of the greatest triumphs of modern medicine (though, in the intervening centuries, discussions of “God as the Designer” have receded from scientific texts). Yet all of this seemed of little comfort when the doctors could not, in fact, fix beautiful little Claire’s broken mechanisms.

Amid witnessing doctors’ efforts to preserve a child’s life, and her devoted parents’ struggle to understand medicine’s failure, I began paying more attention to certain biographical facts in the lives of the scientists—and science-watchers—I read with my undergraduates. The seventeenth-century naturalist John Ray, who wrote one of the most famous books about God as Designer, lost his daughter Mary when she was twelve. The Enlightenment’s Erasmus Darwin, who developed one of the first theories of evolution, buried three of his twelve (legitimate) children when they were infants. The codiscoverer (with Charles Darwin) of natural selection, Alfred Russel Wallace, lost a boy at six, and “Darwin’s bulldog,” Thomas Henry Huxley, buried his firstborn son at four. Botanist Joseph Dalton Hooker lost his little girl Maria when she was six. (Within an hour of her death he wrote to Charles Darwin, who lost a three-week-old infant, Mary Eleanor, in 1842; a ten-year-old daughter, Annie, in 1851; and an eighteen-month-old son, Charles, in 1858. “I think of you more in my grief,” Hooker confided, “than any other friend. Some obstruction of the bowels carried her off after a few hours alarming illness—with all the symptoms of strangulated Hernia.”) Mary Harriman, a philanthropist who bankrolled American eugenics work, lost a five-year-old boy to diphtheria. Annie Besant, who tried to convince Darwin to support her campaign for contraception, became an atheist after watching her seven-month-old daughter struggle with a terrible bout of whooping cough. One could go on and on.

None of this, of course, is surprising to anyone familiar with both the state of medicine and the prevalence of childhood infectious diseases prior to the twentieth century. And children’s deaths are acknowledged, at times, as important within the biographies of these influential men and women and their friends. Indeed, the influence of the loss of Darwin’s daughter Annie on his beliefs, including his theory of evolution, has been the subject of an entire book and a major motion picture. But—perhaps because the loss of a child is not something many of us, at least in certain parts of the world, have to experience thanks to modern medicine and public health—I had never really thought through the commonality of my subjects’ experience with childhood death and suffering until I witnessed Claire’s parents struggling to reconcile the efforts and failures of science with God’s providence. This heightened attention
to certain events in men and women’s lives, and certain paragraphs in their writings, made Sunday’s sermon, in particular, stick in my mind. I began to wonder: What role has what is said to, or believed by, parents at the bedside of a dying child played in individuals’ perceptions of the relationship between science and religion? Have the available stances on both God and Nature amid these tragic confrontations with suffering influenced individuals’ decisions on whether that relationship is one of harmony, conflict, or something in between? These questions are, in many ways, impossible to answer, for often such loss is accompanied mainly by profound silence. But asking them revealed what I find to be a very meaningful thread in many of the primary sources I use in my research and teaching.

The thread begins in the seventeenth century, amid the grand theories associated with the Scientific Revolution, but to notice it one must pay close attention to the diaries and correspondence of famous figures in the history of science, and not just their classic works. Consider, for example, that six years after the first edition of his famous natural theology, *The Wisdom of God Manifested in the Works of Creation*, appeared, John Ray lost one of his four beloved daughters to jaundice. “My dear child,” he wrote to Hans Sloane in early 1697, “for whom I begged your advice, within a day after it was received, became delirious, and at the end of three days died apoplectic, which was to myself and wife a most sore blow.” A month later Ray wrote of the continued influence of this “sad accident” on his ability to work. His wife, he wrote, “is full of grief, having not yet been able fully to concoct her passion.” He blamed himself, for he had not given the little girl a remedy that had proved effectual for himself in the same disease. But he does not seem to have blamed or questioned his beloved all-powerful, all-wise, and benevolent God.

I have often assigned *The Wisdom of God* as an example of seventeenth-century natural philosophers’ devout belief that science and religion are in harmony. Ray revealed in detailed descriptions of animal and human anatomy and used the extraordinary fitness of animal parts to their uses to demonstrate the existence and attributes of God. And indeed his work is a good example of the belief—common at the time—that God gave men two books through which to know Him: the Book of Scripture, and the Book of Nature. Nature, Ray argued, helped one make “out in particulars” what Scripture asserted in general concerning the Works of God, namely *In Wisdom hast thou made them all*. In describing human anatomy, Ray dwelled on the purposeful parts of the body as beautiful examples of the effect of wisdom and design. Thus, he concluded, the body of man was “proved to be the Effect of Wisdom because there is nothing in it deficient, nothing superfluous, nothing but hath its End and Use.” Indeed, Ray insisted that a man who could look upon Nature and yet still disbelieve in God “must needs be as stupid as the Earth he goes upon.”

My students tend to want to throw counter-arguments at John Ray: What about snakes? What about predators? What about disease? But inevitably Ray knew a lot more about disease and suffering than they do. His was not a naïve theodicy (an explanation of why a good, all-powerful, all-knowing God permits evil and suffering). When Ray reflected upon the fact that sleep alleviates pain as evidence of the wisdom of a God, he spoke from experience. At the time of writing his famous book, he suffered from blisters and chilblains; ulcers on his legs sometimes prevented him from walking; and his stomach gave him digestive trouble that incapacitated him for days. Illness, disease, and death were close, familiar, and ever-present to men and women in the seventeenth century. Nearly a third of children died before age fifteen. The bubonic plague still periodically swept through London and its outskirts. John Ray knew all too well that human beings die from diseased organs, succumb to madness, and suffer from malfunctioning parts. But that by no means vitiated his argument: indeed, the whole point of his book was that in the face of widespread pain and suffering, the marks of design proved God’s benevolence, wisdom, and goodness. Toward the end of his life, Ray was at times so reduced to weakness by the sharp pain of chronic sores on his legs that he could not stand alone, and he even confessed to despairing of life itself. Some days his sores so spoiled his memory that he could not pay sustained attention to the animals and plants he so loved to study. Yet even
as his memory and body failed him, so that he was “almost continually afflicted with pain,” he urged his friend James Petiver to continue the task of “carrying and promoting natural history and the knowledge of the works of God.”

Upon first reading, submission and obedience to one’s God-given lot in life seems the main message of natural theology classics such as *The Wisdom of God*. After all, some people, such as St. Bernard, the medieval French abbot of Clairvaux, argued that “to consult physicians and take medicines befits not religion.” Yet we know from Ray’s letters that he was anything but submissive in the face of bodily pain. His letters are full of new prescriptions tried and disappointment on the heels of great hope of relief. And remember he blamed himself, not God, for his daughter’s death, on the grounds that he had not given her the correct medicine. But how was the anxious search for a medicine to heal his terrible sores to be reconciled with devout belief in a wise, all-powerful, benevolent God?

The answer to this question—and the explanation of Ray’s stance at the bedside of his dead child—lies in the fact that Ray viewed medicines as God’s gifts, albeit gifts that would be revealed only through human effort. He envisioned mankind taking up the tools provided by a wise and good God to improve the human condition. Ray spoke of the human hand, for example, as “wonderfully adapted” for all the uses that made man an agent of civilization and improvement. He believed that God had placed man “in a spacious and well-furnished world,” full of beauty and proportion, with materials to be molded and land capable of improvement by industry. God’s provision included seeds and fruit capable “of being meliorated and improved” by human art, and useful for food and medicine. Ray described plants such as the Jesuit’s bark tree (quinine) and the poppy (opium) as clear evidence of “the illustrious Bounty and Providence of the Almighty and Omniscient Creator, towards his undeserving Creatures.” And—this is key—Ray was sure “there may be as many more as yet discovr’d, and which may be reserv’d on purpose to exercise the Faculties bestow’d on Man, to find out what is necessary, convenient, pleasant or profitable to him.”

Ray worshipped a God, then, who had organized the world and the mind of man so that men could improve upon their surroundings through studying natural philosophy and natural history. God had even made man a social creature, so that he could improve his understanding “by Conference, and Communication of Observations and Experiments.” (What a perfect justification for attending a Royal Society meeting!) Ray’s attitude was an early example of the belief that one could and should improve life in the here and now, even amid deep faith in the hereafter. Critically, that stance shifted the blame for earthly evil and suffering to man’s ignorance. Faced with the death of a beloved, as hard as it was to blame oneself, at least one need not blame one’s God.

The trajectory of this bargain—and it was a bargain, with important costs and benefits—is fascinating. The historian John Hedley Brooke has described how despite seventeenth-century natural philosophers’ insistence that natural laws were not binding on God, the pressure to make them so arose directly from the wish to address the existence of suffering. Even Robert Boyle, a founder of the Royal Society, who was said never to have mentioned the name of God “without a pause,” thought it “perhaps unreasonable” to expect God to intervene in natural law to save an individual (to suspend, for example, the law of gravity when someone fell over a cliff). At the time, that temptation to transfer agency (and thus fault) to Man rather than God often removed God to some distance. Take Erasmus Darwin’s epic evolutionary poem, *The Temple of Nature*. At one point Erasmus describes the slaughterhouse of the warring world—predation, pestilence, famine, earthquakes, flood—and wonders:

*Ah where can Sympathy reflecting find One bright idea to console the mind? One ray of light in this terrene abode To prove to Man the Goodness of his GOD?*

Erasmus’s reply was that so long as one placed all the good and all the evil on the scale, “where the Good abides, / Quick nods the beam, the ponderous gold subsides.” Lest a reader miss the point behind Erasmus’s elaborate lines about Nymphs and Muses, he circled back to it in a footnote later in the poem:
When we reflect on the perpetual destruction of organic life, we should also recollect, that it is perpetually renewed in other forms by the same materials, and thus the sum total of happiness of the world continues undiminished; and that a philosopher may thus smile again on turning his eyes from the coffins of nature to her cradles.

One can almost imagine Erasmus, thinking of the cradles in which his own babes lay, grasping for some underlying goodness in it all. Once we abandon the comforting fairy tale that men and women of prior ages were not as attached to their children, we can see the author’s deep experience with the large potential for misery and suffering in the world within these lines. (The fairy tale was apparently first told by the social historian Philip Aries in his 1960 book, *Centuries of Childhood*. Perhaps it is an indication of how truly unimaginable such a state of existence was by the mid-twentieth century; so unimaginable that it was imagined away. Historians of the early modern period have provided extensive—and heartbreaking—evidence that mothers and fathers experienced extreme anguish at the loss of their children.) Erasmus insisted there must be a Goodness to it all, despite puerperal fever robbing young husbands of their wives. Despite the dozens of infectious diseases that robbed young mothers of their infant children. But one had to take the long-term view to witness such goodness, to see that the good outweighed the bad and that “the sum total of happiness of organized nature” increased, rather than diminished, with death. And this is where things really get interesting. For in contrast to John Ray, Erasmus believed in transmutation—evolution, in modern parlance. In his view, progressive change in biological forms provided good evidence of an overall Goodness to the plan of creation, despite death and struggle. Hope could also cling to the intellectual and technological progress of mankind, rooted in the study of natural law:

*Last, at thy potent nod, Effect and Cause
Walk hand in hand accordant to thy laws;
Rise at Volition’s call, in groups combined,
Amuse, delight, instruct and serve Mankind.*

A footnote explained how those who discover causation furnish the powers of producing effects. These were the men who discovered and improved the sciences “which meliorate and adorn the condition of humanity.” For Erasmus, both the evolutionary progress of life and the intellectual progress of man proved the goodness of the system. Though the distance of Erasmus’s “First Cause”—which created the rule of natural law “perhaps millions of ages before the commencement of the history of mankind”—would have caused John Ray great distress, he would have sympathized with the belief in science as the means of ameliorating the human condition. And certainly he agreed that, on balance, the system proved God Good.

The thread evident in both Ray’s and Erasmus Darwin’s work might be called a “Science as God’s Provision to Ameliorate Suffering” theodicy. And it is perhaps most eloquently stated in the concluding pages of *Vestiges of the Natural History of Creation*, a Victorian sensation published anonymously in 1844. Scientists, including Charles Darwin’s mentor Adam Sedgwick, condemned the book as atheistic, and historians note his reaction as at least partly explaining Darwin’s famous twenty-year delay in publishing *On the Origin of Species*. We now know the author of *Vestiges* was Robert Chambers, a Scottish publisher; when asked why he had not put his name to his work, Chambers gestured to the house in which resided his eleven children and replied, “I have eleven reasons.” The concluding chapter of *Vestiges* provides a telling portrait of what was at stake for some Victorian readers faced with either a close versus a distant Creator (a distinction that often mapped onto static versus evolutionary creations): “How, the sage has asked in every age,” Chambers wrote, “should a Being so transcendently kind, have allowed of so large an admixture of evil in the condition of his creatures?” The question must have pressed on Chambers and his wife, Anne, amid the death of three of their fourteen children in infancy. In the pages of *Vestiges*, Chambers’s reply to the age-old question was as follows: The fixed laws established by the Deity were his most august works, permitting great good. But left to act independently of each other, those laws could have effects only generally beneficial, since often there must be interference of one law with
another, and thus evil be produced. He gave the following example:

_Suppose . . . that a boy, in the course of the lively sports proper to his age, suffers a fall which injures his spine, and renders him a cripple for life. Two things have been concerned in the case: first, the love of violent exercise, and second, the law of gravitation. Both of these things are good in the main. In the rash enterprises and rough sports in which boys engage, they prepare their bodies and minds for the hard tasks of life. By gravitation, all moveable things, our own bodies included, are kept stable on the surface of the earth. But when it chances that the playful boy loses his hold (we shall say) of the branch of a tree, and has no solid support immediately below, the law of gravitation unrelentingly pulls him to the ground, and thus he is hurt. Now it was not a primary object of gravitation to injure boys; but gravitation could not but operate in the circumstances, its nature being to be universal and invariable. The evil is, therefore, only a casual exception from something in the main good._

Chambers then addressed the question of what one must do in the face of this knowledge. “The Great Ruler of Nature,” he wrote, “has established laws for the operation of inanimate matter, which are quite unswerving, so that when we know them, we have only to act in a certain way with respect to them, in order to obtain all the benefits and avoid all the evils connected with them.” Yes, great suffering existed, but in the unity of nature’s laws the First Cause had benevolently provided the means of escape. Once man saw the human constitution as merely a complicated but regular process in electrochemistry, for example, the path toward elimination of disease, “so prolific a cause of suffering to man,” became clear: to learn nature’s laws, and to obey them. This was an answer to the problem of suffering that could combine the endeavor of science with a deep faith in the benevolence of God’s plan. Too, it offered a pious defense of why science should be valued and supported.

Indeed, perhaps one of the most interesting productions of this “Science as God’s Provision to Ameliorate Suffering” thread is Andrew Dickson White’s 1896 _History of the Warfare of Science with Theology in Christendom_. This book has often been used as evidence that science and religion have always been in inevitable conflict. And yet, as historians have often pointed out, White insisted “true religion” was not in conflict with science. Indeed, he believed his book tracked the development of a truer Christianity, in which human beings could trace God’s providence and goodness in humanity’s movement away from dependence and submission to the environment, toward controlling the forces of nature to satisfy the wants of humanity. One profound example White gave of orthodox theology hindering this progressive movement—of both religion and science—appears in a discussion of the medieval church’s (supposed) persecution of Roger Bacon for pursuing natural philosophy:

_In two recent years sixty thousand children died in England and in Wales of scarlet fever; probably quite as many died in the United States. Had not Bacon been hindered, we should have had in our hands, by this time, the means to save two thirds of these victims; and the same is true of typhoid, typhus, cholera, and that great class of diseases of whose physical causes science is just beginning to get an inkling._

White was called out for the strangely unhistorical passage at the time, but this brief but weighty tirade against any interference in science makes sense when you consider it was written by a man who had almost lost a son to typhoid a few years earlier. For some people, at least, White’s account of science triumphing over orthodox theology became a lens through which God’s immanent presence in history could be seen. And through that lens some found a path toward harmonious relations between science and religion. Indeed, the naturalist Karl P. Schmidt recalled that White’s book contributed most to his own reconciliation with religion. And White’s grand narrative inspired the Catholic modernist George Tyrrell to try to reconcile theology with modern science, rather than assume such reconciliation was impossible.

The key to both Schmidt’s and Tyrrell’s responses to _The Warfare_, I believe, is that White gave readers an opportunity to find evidence of God’s benevolence in man’s increasing ability to ameliorate suffering through science. That opportunity was embraced in _Contributions of Science to Religion_, edited by the famous modernist theologian Shailer Mathews. Published in 1924, the book was an...
attempt to counter increasing talk of a conflict between God and Evolution, most evident in William Jennings Bryan’s campaign to pass legislation against teaching evolution in American schools. In his contribution to the book, the influential sociologist Ellsworth Faris described White’s History as telling the story of an ongoing change from dependence and submission to conscious intervention and control. Human nature itself was being brought within the realm of the sciences of psychology and sociology, opening up the hope that it could be controlled. And thus, Faris noted, “war, poverty, and crime which were formerly defended, apologized for and even conceived as a part of the divine plan, appear to our modern eyes as problems to be solved, as challenges to the technique of control which scientific men persistently seek.” Faris did not explicitly attribute the possibility of progress in the sciences to God, but another contributor, Eugene Davenport, did, writing: “Whoever soberly considers what science has achieved for agriculture in the short space of half a century, can but render thanks to Almighty God for His revelation of the laws of nature, and he will face the future with confidence unlimited and with gratitude unbounded.”

But it was exactly these kinds of “scientific consolations” Billy Sunday had railed against ten years earlier. Sunday found scientists’—and liberal and modernist Christians’—emphasis on nature’s laws a poor kind of salvation, which seemed to sacrifice the truly redemptive power of prayer, belief in miracles, and the comforting promise of Heaven. It was useless, he insisted, at the bedside of a dead child. By marked contrast, liberal and modernist ministers described the very fate of Christian faith as at stake if Americans turned to Sunday’s brand of Christianity—a Christianity that included, for example, petitionary prayer. In a 1926 sermon, the Unitarian Reverend Harold Speight described how often he heard people complain bitterly of unanswered prayer: “The desired aid did not arrive, the sickness was not stayed, and then faith went, as a candle flickers and goes out if an outside door is open.” And yet, Speight urged, it was at that very moment that science could reestablish and strengthen faith. If men and women only understood that at the moment of loss, it was not God who was absent, but the scientific knowledge required to control nature—that someone’s ignorance “accounted for the disaster which prayer had failed to avert”—then not only could faith remain, but action could be “diverted as rapidly as possible to the purposes of science” so that men and women could be of better aid in the future. Speight believed, in other words, that God had organized the world in such a way that skill could be improved, albeit slowly and laboriously, via science. Indeed, for Speight, doing science became a better form of prayer, for in progressively alleviating suffering and pain, human effort and ingenuity would ultimately vindicate faith in God’s benevolence, power, and wisdom. This, for Reverend Speight, was not just “scientific consolation” but a religious call to trust in natural law and pursue scientific progress.

John Ray, Erasmus Darwin, Robert Chambers, Shailer Mathews, Andrew Dickson White … all, despite their theological differences, would surely reply “Amen” in theory. But at the bedside of a lost child, both believers and nonbelievers must concede that Speight’s optimistic demand to take the long-term view is perhaps too weak a comfort for the human heart. I note above that inspired by Claire, I began noticing—for the first time—a meaningful thread in the primary sources I study with my students. Why do I think this thread is meaningful and important? Because I believe that in attending to the moments and experiences where decisions regarding the relationship between science and faith are at their most starkly personal and intimate, we might develop a more empathetic understanding of both historical and present stances, whether they agree with our own or not. For who can judge the response of a mother or father at the bedside of a dying child—in the seventeenth century or the twenty-first? That an individual’s attitude toward science may be intertwined with answers to why God would allow such things, or whether God exists at all, is worth attending to. That attention might produce a more historically accurate portrait of the factors involved in controversies over the relationship between science and religion. And just as important, it will help ensure that we view stances through a more compassionate lens, sensitive to the meaning found (or lost) in moments of both misery and bliss.
SPIRIT literally means “breath.” Something takes our breath away, renders us helpless or transformed or transfixed, calls forth a new way of seeing, a different way of hearing or touching or sensing. Often, these happenings arise when we least expect them—walking to work, washing the dishes, encountering another human being during a day. But how can we convey such breathtaking instances to others—especially when the very nature of such things is often beyond words, when we lack the vocabulary to articulate what has happened to us?

JONATHAN CALLARD writes and lives in Pittsburgh. His nonfiction has appeared in Gulf Coast, Image, Arts & Letters, and Gulf Stream, and he has received fellowships from Brush Creek Foundation for the Arts, the Ragdale Foundation, and the Virginia Center for the Creative Arts.

SPIRIT LITERALLY MEANS “breath.” Something takes our breath away, renders us helpless or transformed or transfixed, calls forth a new way of seeing, a different way of hearing or touching or sensing. Often, these happenings arise when we least expect them—walking to work, washing the dishes, encountering another human being during a day. But how can we convey such breathtaking instances to others—especially when the very nature of such things is often beyond words, when we lack the vocabulary to articulate what has happened to us?

JONATHAN CALLARD writes and lives in Pittsburgh. His nonfiction has appeared in Gulf Coast, Image, Arts & Letters, and Gulf Stream, and he has received fellowships from Brush Creek Foundation for the Arts, the Ragdale Foundation, and the Virginia Center for the Creative Arts.

SPIRIT LITERALLY MEANS “breath.” Something takes our breath away, renders us helpless or transformed or transfixed, calls forth a new way of seeing, a different way of hearing or touching or sensing. Often, these happenings arise when we least expect them—walking to work, washing the dishes, encountering another human being during a day. But how can we convey such breathtaking instances to others—especially when the very nature of such things is often beyond words, when we lack the vocabulary to articulate what has happened to us?
Ask Questions, Use Details

Start with humility. You are trying, but in terms of being able to completely understand or explain something, you may be far off. Acknowledge for your reader that they are accompanying you on a journey, where together you can consider some sort of query sparked in you—but the writing itself is in process. One way to talk about nonfiction writing is by using the terms “what,” “why,” and “then.” The “what” can be the larger question leading you forward, the “why” can be what’s at stake for you in pursuing it, and the “then” can be the movement in a piece, some sort of takeaway or shift in consciousness.

I often find that it is through play, through allowing myself to wander all over the page and the map of my memory, that phrases or details that I hadn’t thought of can emerge. If something happened to me in a particular place, for example, I go there fully, using the five senses to help me return to that state of being. Just push the pen and steep yourself in that moment. Focus, as you write, on noticing and acknowledging concrete things—rather than just expressing an emotion, intuition, or some belief or idea. Discern specific ways to illuminate the “what,” which can be so large and abstract (love, fear, God) that it needs to be surrounded with layers of actual experience and people in order to come alive, the way Annie Dillard evokes an eclipse in Washington or Pico Iyer observes grandmothers, children, and deer in Japan. This takes time, many drafts, because you are just unearthing your “what.” “We dance round the ring and suppose,” Robert Frost writes, “but the Secret sits in the middle and knows.” “Tell all the Truth but tell it slant,” Emily Dickinson adds. No detail is wrong or out of place as you play at the beginning, because you’re giving your subconscious room to roam.

Let yourself go, what some theologians call kenosis, or self-emptying. For it is often the self, the ego, that gets in the way of the divine, and of our ability to connect with others, religion scholar Karen Armstrong reminds us (check out her powerful memoir The Spiral Staircase: My Climb Out of Darkness). Don’t be too concerned with perfection, either in who you are or were on the page, or how you get it all down.

Practice and the Body

The act of writing is itself a spiritual practice. Writing forces you to step back from daily life, to see it anew. When I am feeling far from hopeful, I find that taking time to write calms me, grants me perspective. It might be that I spend fifteen minutes just getting down raw footage from the day—the way someone looked on the bus, an epitaph scrawled on a mailbox, the smell of a bakery on the corner. Maybe I will even write of myself, or someone else, in the third person, as if I am telling a story, and sometimes this practice allows me to detach from whatever I’m living, just a little, and see it from the angle of adventure. Anaïs Nin, who faced her own inner demons, dissolved discord through story; “I take my distance. I look at the dramatic possibilities,” she writes, so that she’s “changed into an adventurer faced with every obstacle, every defeat, every danger, but as they increase the sense of adventure increases too.” Writing can serve as a tool to hand you back your life, your center—your body.

For writing is also a bodily thing. Not only do we use hands and fingers and arms and trunk to swing into typing or writing—even our mouth and lips when using speech-recognition technology—but we also make words like we make music, like we dance. Our first storytellers, from African folklore to Homer, were oral ones. We have long sentences, our punctuation like short breaths or skipping steps as we move through a thought or image or sensation. We have short sentences. We write in rhythm, just as we breathe in and out, long breaths, short ones, sometimes none at all. Writing is sound; writing is meant to be heard.

Awe and Hesitation

The problem of defining spiritual writing, I think, comes from the fact that what is indeed a “breath” of inspiration or revelation to one humanoid is anathema or humdrum to another. Still, I think that the word awe can be a good place to start when considering this genre: “awe” in terms of something “awesome” or being “awestruck” as well as “awe” in “awful.” Big events in our lives (sometimes delivered in the most mundane packages) make us sit up and think, and re-consider—wonder. Try approaching your writing with a sense of curiosity, rather than certainty or let-me-tell-you-the-truth-with-a-capital-T. We can all speak our truths, of course, but we can share them as an offering, not a demand, to the reader. We can invite the reader along.

Writing in the New York Times, Philip Zaleski proposed that spiritual writing “deals with the bedrock of human existence—why we are here, where we are going and how we can comport ourselves with dignity along the way.” In the 2013 edition of Best Spiritual Writing, which Zaleski edited, Sy Montgomery wonders to what extent an octopus can understand him, can recognize him, maybe even have feelings about him, and this morphs into a larger “what” about connection with the Other or with some spark beyond the human. There’s an element of testimony, of bearing witness to something, as the apostle Paul was wont.
to do in his letters. But there’s also a trace of I-don’t-know-what-this-is—but-I’m-on-the-path-to-find-out—an attitude that really lends itself to good nonfiction writing across the board, prose that scrutinizes itself in more than a cursory, know-it-all way. Of course, we also bring to paper our passion, our heart, our own unique set of experiences that have taught us to know (or want to know) something real in our bones. To me, the spiritual resides in that tension between what we understand about ourselves and what we do not—and writing becomes the bridge, the conduit, holding these two lands together, sometimes barely. The fact that Augustine’s Confessions (composed in 397 A.D. by the North African Catholic bishop) is arguably considered the West’s first memoir demonstrates the strong affinity between nonfiction and the spiritual.

Beyond humility, emotion, and detail, spiritual writing also can delve into history and culture and science and other bodies of knowledge (see Dillard’s information on planets and space in “Total Eclipse” or Iyer’s references to Japanese nature gods and the habits of elephants in “Grandmothers”). Whether it’s scholars writing about the origins of sacred texts or a reporter filling us in on the reconstruction of the Temple Mount in Jerusalem, what separates this kind of writing from, say, academic writing is the fact that there’s something at stake for the writer, some sort of pebble in the shoe that’s prompting them to share their musings and research. Often, this endeavor has to do with how we position ourselves among people. Philosopher and mystic Simone Weil praised the notion of hesitation, a prayerful posture that is good to take before speaking with another person, a sense that we as individuals are only a part of something greater. Here’s our slice of it, written down—and here’s how it may or may not fit with other slices, other truths—and here’s how that might affect how humans orient themselves toward each other, and toward living in the world, breathing in and out.

**Engaging the Other**

Whether we face a religious institution’s complicated history, a family tradition, or a burning bush, we all encounter uncertainty through things seen and unseen. Spiritual writing can welcome the strange, sow a story that involves our own yearnings but also intersects with mystery. The tension between what we want to be and who we are can drive a piece of nonfiction; the gap between our own yearnings but also intersects with uncertainty through things seen and unseen. Spiritual writing can welcome the strange, sow a story that involves our own yearnings but also intersects with mystery. The tension between what we want to be and who we are can drive a piece of nonfiction; the gap between our own yearnings but also intersects with mystery. Often, we confront this gap only when we run into other beings or landscapes that baffle or scare, like a great storm edging slowly toward us, beautiful and frightening at the same time.

To rescue yourself from navel-gazing, stop and look around. Observe anything long enough—a house, a tree, a person—and it can take on fresh meanings, triggering insight and imagination with its very color or smell or sound. And whether you’re exploring a lover’s body or speaking directly to a higher power or exhorting a community to rethink its ways, you’re participating in communion. You’re seeing and being seen.

**Charism and Prophecy**

In his essay “Letter from a Region in My Mind,” published in the New Yorker in 1962, James Baldwin begins with memory, and a problem: he’s fourteen years old, and he’s afraid—“afraid of the evil within me and afraid of the evil without.” As a black male growing up in Harlem in the 1940s, he realizes how little separates him from the streets, from a life of crime: “I had no idea,” he writes, “what my voice or my mind or my body was likely to do next.”

To speak, to commune, with readers (in this case, a predominantly white audience), Baldwin draws on a charisma, or spiritual gift, for language, for a preacher’s rhythm. He draws us in with his honesty, his objective, self-reflexive look at the lost person he was, but he doesn’t stop there. He extends his eye to the signs of the times, from his youth to his narrative present to the future, into our day now, which is what makes a prophetic voice: one that speaks to us not only of a different way of seeing but also of cold hard truths that readers may not want, but need to hear (“whoever has ears to hear, let them hear,” Jesus exhorts his followers). The word obey stems from obedire, “to listen, pay attention.”

One prophetic paragraph shifts from descriptions of “every wine-stained and urine-splashed hallway” and “clanging ambulance bell” and “every scar on the faces of the pimps and their whores” to the fear that exists between blacks and whites, where “only the fear of your power to retaliate” would make whites treat blacks with respect—“but I do not know,” he adds, “many Negroes who are eager to be ‘accepted’ by white people, still less to be loved by them; they, the blacks, simply don’t wish to be beaten over the head by the whites every instant of our brief passage on this planet.” Here, he pivots, and speaks directly to his audience: “White people in this country will have quite enough to do in learning how to accept and love themselves and each other”, and once they have found a way to do this, “the Negro problem will no longer exist, for it will no longer be needed.”

Baldwin’s persona seeks God’s love but finds that he’s “yelling up to Heaven and Heaven would not hear me”; because he’s been raised in a culture where God is white, where
blacks look up or down but not at each other and whites look away, he “[gives] up all hope of communion” with a divine source. And yet he doesn’t stop writing. The essay could have ended there, but it does not—we learn that Baldwin discovers preaching in church as the “gimmick” that keeps him from turning criminal, a charism that allows him to commune with his congregation when the Holy Spirit descends—“Their pain and their joy were mine, and mine were theirs”—and then to run home “to be alone there, to commune with Jesus, my dearest Friend, who would never fail me, who knew all the secrets of my heart.”

What kind of voice might you adopt to transmit to others some truth of your intimacy with the earth, or with someone you know well, or even with some spirit? Try grounding your very experience in the signs of the times. In one essay I write, I respond to our country’s recent presidential election and the violence I witness around me through the prism of my own body, my own religious practice, my own divisions raging inside. I toggle back and forth between looking outward, closely, at race-based killings or fear-based politics, and slowing down and listening to my own troubled heart, to where God might be speaking. By moving in time—skipping around from inauguration to video clip to political outsider to voting booth—I follow kairos, or God’s time, rather than chronos, linear time. Consider what kinds of memories you might arrange together to explore something both particular and universal in your writing, and how you can make them ring out in words, like a bell.

Into the Unknown
Trust in the process. Patricia Hampl notes in her essay “Memory and Imagination” that “writing a first draft is a little like meeting someone for the first time.” She adds:

“I come away with a wary acquaintanceship, but the real friendship (if any) is down the road. Intimacy with a piece of writing, as with a person, comes from paying attention to the revelations it is capable of giving, not by imposing my own notions and agenda, no matter how well intentioned they might be.

And so it is with us, with matters of the spirit. Pay attention, be a noticer, and let the act of revision transform you, bit by bit. You may find yourself changing your mind, your perception; fittingly, that’s the original meaning of the word repentance. You may have to start all over again, or lose your favorite sentences. Embrace those things that scare you about your subject—as with any spiritual quest, fears can perhaps take you to where the writing’s “what,” or purpose or question, lies. It takes courage to be a good writer. It also takes faith.

Writing about Rituals, and Rituals That Help Us Write

JESSICA MESMAN GRIFFITH

THE POWER OF RITUAL is what drew me back, more than anything, to practicing a traditional faith. I’d tried other ways of being spiritual and religious, but it wasn’t until I stepped back into a Catholic church where schoolchildren were walking the Way of the Cross that I felt I had entered a space where I could worship. Hearing all their young voices enunciating Scripture in unison, I felt something that I had long forgotten in my years outside of the Church, a feeling that was something like home and a little tribal. But it wasn’t only nostalgia.

Since then, I’ve written about the Way of the Cross many times—in many different essays—trying to understand my attraction to it and the strange comfort it gives me. What was it about that particular ritual that overpowered me? Why didn’t I find it morbid to see small children walking in the footsteps of a tortured man, imagining and inhabiting a death scene?

I participated in this ritual nearly every Friday during Lent as a child, and when I took it back up as an adult, I felt an overwhelming connectedness with the living and the dead, with all those who had walked this way before me and all those who will walk it long after I’m gone, and even with my former self, my childhood self. I wondered if the ritual had somehow taken root in my imagination, teaching me to see—through secular symbols and metaphors and poetry—a deeper meaning in suffering. It wasn’t merely the story of the crucifixion that conveyed the meaning to me; it was the rhythm of the words of the prayers, the heads dipping in unison, the rhythmic bending of knees, the tune of the hymn “Stabat Mater.” When you’re a kid, you easily tune out the story. But the rhythm, the images, the smells, stay with you, like faint traces of perfume in the folds of my clothes.

Those rhythms and images and smells return the story to me in unexpected ways—not just the story of the death of Jesus, but my story. Any time I practice this ritual, I’m entering both. It gives me access to memories of my former self that might otherwise remain buried.

Joan Didion, sometimes described as a literary patron saint, describes the power of ritual in “On Keeping a Notebook:”

some morning when the world seems drained of wonder, some day when I am only going through the motions of doing what I am supposed to do . . . on that
bankrupt morning I will simply open my notebook and there it will all be . . .

Didion’s ritual—the daily writing—is writerly rather than religious, but the end result seems to me to be similar. Yes, sometimes rituals feel empty, rote, or monotonous. But they can also be containers for deeper knowledge and sensory memory, and perhaps also for previous selves now otherwise lost. Meaning is found at the intersection of the ritual and the individual, in the space where our experience and creativity meets an established or “rote” form.

Conversely, experiencing a ritual for the first time may reveal something about ourselves we never realized before. As Didion helpfully puts it:

However dutifully we record what we see around us, the common denominator of all we see is always, transparently, shamelessly, the implacable “I.”

But the first step is to dutifully record. Ask yourself the following questions when writing about ritual:

What is in front of you?
Behind you?
Look all around you and notice the specifics of the space you’re in.
Why are you there?
Who else is there?
Who is leaving?
Who is paying attention and who is not?
Who is crying?
Is this a familiar or unfamiliar place or event?
Do you feel welcome or unwelcome?
Do you feel like you belong?

When writing about a ritual from a tradition that is foreign to you, try not to make assumptions about the people who are practicing it. “Spiritual tourism” holds perils—assuming more knowledge of a culture than you really have, sentimentalizing the faith of others, or appropriating a ritual or practice that isn’t your own as if it were. I admit I’m a frequent spiritual tourist—I love going on pilgrimages and visiting the holy sites of many different faiths, and I love reading about others’ experiences as well. But I find the writing most compelling when the discomfort or revulsion or attraction or tension or even ignorance the writer feels tells me about who they are, what they believe, and what they’ve learned about themselves in this context, rather than assuming knowledge or judgment of those they encountered.

In his essay, “A Skull in Varanasi, A Head in Baghdad,” writer Todd Gitlin—who says he is not at all a religious person—wakes up to who he is and what he stands for while contemplating an unfamiliar religious ritual that involves the smashing of skulls in the Ganges River in India. When he returns home to New York to the news of the decapitation of a young American in Baghdad, his brain makes a connection between the two experiences and what they say about what it means to be human, to have a body with a skull and a brain that will meet an end.

“No doubt there is a great deal about these beliefs I don’t begin to get,” he writes of the Hindu ritual. “But these are the mind’s pastimes of an amateur, a curious dilettante.” Ritual, by definition, is always the same. But the experience of ritual, the internal story experienced, the knowledge gained, can vary vastly.

Writers can also use well-known rituals as a starting point to push against or render in unexpected ways. The very short essay “Ash Wednesday, 2000” from Susan Neville’s memoir, Iconography, grew out of a writerly experiment, a vow to write every day for the season of Lent. Neville, who is not Catholic, had never observed Lent, but she had a hunch that ritualizing her writing in this way might reveal a pattern or narrative in her life that she was otherwise unable to grasp. She’d never been to an Ash Wednesday Mass, and despite her commitment to exploring Lent, she doesn’t end up there this time either. Instead, she goes to the mall. This, she admits, is a ritual that grounds and comforts her, that speaks to her of who she is (though would rather not be)—a middle-aged, white American who finds a ritualistic comfort in shopping. And yet, by the end of the essay, she finds herself covered in ashes, at least metaphorically. She goes to the makeup counter and covers her hands in different shades of lipstick. When she writes about the experience in her Lenten journal, she arrives at the same destination as the Catholics—reminded of her own mortality—though in her own peculiar way.

In the essay “All of the Above,” writer Faith Adiele takes on the ritual of telling a story at a dinner party—even breaking it into helpful steps for the reader with a numbered list—while also considering the rituals of courtship and marriage in three different cultures: Nordic, American, and Nigerian. Again, we see that rituals serve to show us both who we are and who we aren’t—a consistent theme in the work of Adiele, who navigates all three heritages and ethnicities in her own life. She is a storyteller, but her story doesn’t quite fit into the container of standard tales of American courtship. She plays with that container, to comedic effect, in this piece. She begins:

In your new married life, You & O are invited to couples’ dinner parties where at some point the hostess turns to you and crows: “Tell the story of your marriage!” At fifty-something, this is your first marriage, so you wonder, is this what married people do? Or are you objects of speculation because you’re fifty-something first-time newlyweds? Or has someone told her that either the story or its telling
is dinner-party-worthy? Still somewhat enamored of your own story, you’re happy to oblige, after the inevitable glance at each other (who’s got this?), the inevitable writerly pondering of what to include, where to begin.

Faced with telling their unconventional tale of cross-cultural, middle-aged romance, she relies on a standard form—a ritual—to give shape to what might otherwise seem shapeless.

Step one, according to Adiele: “Begin at a pivotal moment.”

From there, she makes the form her plaything; she is as digressive and poetic as she cares to be. That playfulness acknowledges her facility for crafting a crowd-pleasing narrative out of the most personal experience—a nod to the essayist’s gift and burden.

Research in neuroscience supports the conclusion that rituals—not just religious rituals, but also the secular kind, including list-making, daily journaling, and other writerly tools—really do work. At the very least, they work to ground us and to comfort us. Mourning rituals can lessen feelings of grief, for example. And I’d suggest that the weird rituals you need to perform before you write—most of us have them—may truly help you to focus your attention and prepare your brain for the experience. Some people feel guilty about procrastination, but I encourage my writing students to see it as part of the process. Build your particular mode of procrastination into your writing ritual, and you may begin to see it not as an evasion but as a necessary part of your practice—which it is.

For an artist and a writer, being uncomfortable with a ritual can be equally fruitful, a source of creative tension. Not everyone will agree with me that contemplating the death of Jesus is a comfort. People who suffer from post-traumatic stress disorder may be retraumatized by Lenten rituals and traditional Christian devotions. But just think how different an essay would look from each perspective, and how the same ritual might serve as a frame for the exploration of two vastly different experiences.

JESSICA MESMAN GRIFFITH is the author of the memoirs Love and Salt and Strange Journey and a cultural columnist for US Catholic magazine. She’s the cofounder and editorial director of Sick Pilgrim, a website and online community for artists and spiritual seekers, and a co-organizer of the Trying to Say God Conference at the University of Notre Dame. She teaches at Christian Theological Seminary in Indianapolis.
To Retreat, or Not to Retreat?

Writers and other creative people need a space of their own, but they also need to be in the world. Every writer needs to find their own balance. In this issue, RACHEL MABE discovers she’s not cut out for the classic residency, and CYNTHIA D. BERTELSEN learns to embrace the loneliness of the writing life.

Getting Away from Getting Away from It All

RACHEL MABE

June of 2016 found me lying on a twin-sized daybed on the third floor of an unfinished house in Marquette, Nebraska—a village of 230 whose sole purpose seemed to be the two-step monoculture of corn and soy. Flies slipped through the shoddy screens to explore every available surface. I had pointed a fan directly at myself in an attempt to abate the ninety-degree heat. The room had no real ceiling, just sheets of Styrofoam resting on wood beams, beyond which I could see the rafters in the attic, and in one corner, if I looked up at just the right angle, I could see beyond walls to the blue sky. Half the wood flooring was covered with raw squares of plywood. A hole in the floor allowed me, if I pressed my eye to the opening, to view the bed in the room below mine. At night, the light from the hallway intruded. Privacy was an impossibility. Everyone could hear me tell my boyfriend over the phone, “This place is so weird.”
This was Art Farm. I found myself there almost by accident. In the whirl of applying for jobs and fellowships for post-MFA life, I had included a handful of funded residencies, to which I applied both because I thought I was supposed to and because the idea of escaping from my mundane and hectic everyday life to focus on writing was romantically appealing.

At the beginning, I tried to embrace the sparseness of Art Farm—the alien landscape, the heat that lay on the earth like the hand of an angry god, the rustic living arrangements. Maybe something beautiful would come from the nothingness. I thought of Art Farm as a kind of vision quest, where personal agonies ripped the curtain between consciousness and subconsciousness and the wellspring of creativity would lie before me for the taking.

But a week in, unable to nap in the afternoon heat, I realized that I was discouraged. Discouraged by the loneliness, the heat, the flies, the landscape without anywhere to walk, my fellow artists who I tried, tried talking to. I thought about how I had to drive into town to be around people and air conditioning and normal life. I decided that I needed regular life to steel me against the aloneness of writing, to fuel my creativity, to prop me up for the long, lonely hours at a desk.

Residencies are highly competitive among writers and other artists, who see them as a refuge, a place apart from everyday life. The idea is you will be able to be more productive in a magical place where you can create for weeks on end, without interruption. Composer and writer Jan Swafford wrote about his experience at numerous residencies for Slate in an attempt to illuminate what it’s like to actually be in a sought-after place like Yaddo or MacDowell: “So all day you make art. You are alone with your words or notes or images, your heart and soul and whatnot.” Who doesn’t want that? It sounds perfect. Even now, even after the disaster that was Art Farm, I can easily imagine myself in a castle in Scotland writing all day long.

Of course, artists were not the first to retreat from society to be alone with their work, with their heart and soul and whatnot. Every religion has its ascetics. Some early Christians left human society altogether, living as hermits. Monasteries and nunneries are less extreme expressions of the same principle. Even common believers may take refuge in temporary retreats.

And what of science and other studies? Academia is seen as occupying a privileged space disconnected from everyday life—the “Ivory Tower” even connotes a physical separation. Besides being considered elitist, academics’ research is assumed to be isolated from the practical problems of regular on-the-ground life.

But to what extent do isolation and solitude actually breed creativity or purity or deeper thought?

Colin Wilson’s 1956 book, The Outsider, asserts that creative geniuses (van Gogh, Nietzsche, Kafka) more often than not live as outsiders—separate from everyday life and alienated from their peers. This idea still prevails in Western society: The Outsider has never been out of print, and numerous other books (Quiet) and articles (“Outside Advantage: Can Social Rejection Fuel Creative Thought?”) have focused on the leaving early. That meant giving up, admitting defeat, not being able to hack it. Damn it, though—I’d given the place a fair chance. I’d been there a week, during which I’d struggled against the isolation, the nothingness, the sparseness, the insect infestations . . . and what I discovered was that the Art Farm’s particular variety of monasticism was not for me.

My boyfriend was flying into Omaha the following weekend, when my two-week Art Farm residency would be at an end. The plan was for me to pick him up at the airport and we’d road trip back to Pittsburgh together. I drove to Omaha a week early and checked into a La Quinta. I felt guilty when I left, but it didn’t take long for that guilt to dissipate. I was still devoting a week to my writing, I reasoned, just in an air-conditioned hotel room. In addition to writing at a small desk connected to the wall, I read and napped and did exercise videos—venturing out only for food. In essence,
I attempted to turn all the somethingness of a city (albeit a Nebraskan city) into the nothingness of Art Farm, only without the physical discomfort. It was my own version of a writing residency.

I was physically comfortable in Omaha, but I still felt a deeper discomfort. It took me a couple days to realize that it was loneliness. I had not been touched in a week and a half. And I was in Omaha. A place I did not understand. A version of a writing residency.

To counteract the demons of isolation and solitude, I tried immersing myself in real-world situations have only untested ideas and possibilities.

Scientists who don’t apply theory to real-world situations have only untested ideas and possibilities.

Thoreau, the American poster boy for isolated living, wasn’t actually alone at Walden Pond. He lived within a twenty-minute walk of his home—a walk he made multiple times a week, Kathryn Schulz says, “lured by his mother’s cookies or the chance to dine with friends.” What’s wrong with Thoreau’s needing both solitude and connection? Sure, he misled readers to think that he was in complete isolation, that he did not, in fact, need others, but that’s a matter for scholars to parse out. Besides, I don’t know about Thoreau, how he felt about his shiftiness, but my conscience is clear. I was hot, bored, bitten, itchy, unable to work. So I left.

A word on comfort. Amazing things can come from physical and emotional and mental discomfort. But comfort is good, too. The comfort of a full life, a pleasant space to live and work in, the love and support of others. A comfortable bed that doesn’t hurt your back. A room of one’s own, preferably with finished walls and air conditioning and pest control. Maybe the ordinary aggravation and stresses of everyday life are enough for a writer of my type. Maybe a little solitude, alone with my thoughts at my desk, or in my car, or in a crowd, is enough.

Revisiting the Loneliness of the Long-Distance Writer

CYNTHIA D. BERTELSEN

I REMEMBER the exact moment that I decided to become a writer, the year I was in second grade. Snuggling deep into the coffee-brown overstuffed couch my mom had hauled home from a secondhand shop, I opened one of the two Bobbsey Twins books my grandmother had given me for Christmas and read, with snow falling outside the picture window of the living room. Two hours later, I let the book fall to the floor. Caught up in the world of Bert and Nan and Flossie and Freddie, I just lay there and decided I wanted to write stories like Laura Lee Hope did, to enthral people with words.

Laura Lee Hope, I later learned, was not one person, but several. Despite that brief disillusionment, I still nurtured the idea of becoming a writer.

It’s been a long journey since that snowy day on the couch—and a lonely one, in which images of the romantic life of prolific hermit writers like J.D. Salinger have bumped up against society’s idealizations of both extroverts and submissive women.

Sure, most writers say writing’s a solitary business. And it is: you sit alone with pen in hand or in front of the computer for long stretches. There’s some consolation in reading stories about writing, and everyone from Anne Lamott and Stephen King and Annie Dillard to Eudora Welty and Margaret Atwood has contributed to the canon of reflections about the writing life. Wright Morris even published a book with the catchy title of The Loneliness of the Long-Distance Writer (1995).

But while people talk about the physical isolation, I think the emotional isolation might be even more overwhelming. I think one reason why I feel a profound sense of loneliness as a writer is that most of the people—family, chiefly—surrounding me offer little emotional support.

In fact, they often completely ignore the writing part of me. I get the message that if I talk about my art, I’m seen as a braggart. For me, getting an article published now and then is simply the same sort of thing as, say, taking a business trip to Germany or India (which some of my relatives do). Just part of the job, the process.

To counteract the demons of isolation and solitude, I tried immersing myself in
NEW from the

UNIVERSITY OF NEBRASKA PRESS

Should I Still Wish
A Memoir
JOHN W. EVANS
$19.95 • Paperback
American Lives Series

American English,
Italian Chocolate
Small Subjects of
Great Importance
RICK BAILEY
$19.95 • Paperback

Pain Woman Takes Your Keys,
and Other Essays from a
Nervous System
SONYA HUBER
$17.95 • Paperback
American Lives Series

I’ll Be Your Mirror
Essays and Aphorisms
DAVID LAZAR
ILLUSTRATED BY HEATHER FRISE
$22.95 • Paperback

Thinking Continental
Writing the Planet
One Place at a Time
EDITED BY TOM LYNCH,
SUSAN NARAMORE MAHER,
DRUCILLA WALL,
AND O. ALAN WELTZIEN
$29.95 • Paperback

Telling Stories
The Craft of Narrative and
the Writing Life
LEE MARTIN
$19.95 • Paperback
various community organizations. One of these was a group devoted to preserving a magnificent cookery-book collection housed in the university library near me. I liked the work, and over a period of years I took on leadership positions. But weekly and monthly meetings demanded a lot of my time, and squabbles between committee members drained my energy, and even editing the newsletter of this organization became a trial because so few contributors stepped forward. Surrounded by living, breathing warm bodies, I found myself still alone, physically and spiritually depleted, drowning in the world.

And—more to the point—not writing.

One morning, after a particularly fractious meeting at the university library, I knew the time had come. I resigned that afternoon.

To do the real work of writing, I realized, requires a form of solitude, not unlike that of the anchorite, living in seclusion for religious reasons. Julian of Norwich served as my role model. Walled into a cell in a convent in Norwich in the late fourteenth century, away from the sinuous clamorings of the world, she wrote *Revelations of Divine Love*, the first known English book by a woman. She said “No” to the world. And that is what I learned to do as well.

Yes, to write is to be alone, even lonely. The Internet and social media help in driving away some of the physical and mental isolation, bringing other living, writerly voices into my life. But the danger of over-involvement is there as well. What Ernest Hemingway stressed in his 1954 Nobel acceptance speech remains true:

> Writing, at its best, is a lonely life. Organizations for writers palliate the writer’s loneliness but I doubt if they improve his writing. He grows in public stature as he sheds his loneliness and often his work deteriorates. For he does his work alone and if he is a good enough writer he must face eternity, or the lack of it, each day.

Indeed, there’s something of the eternal about writing, the words remaining long after the flesh is dust.

And so, for now, I accept the loneliness, as it’s the price I must pay to do what I do. These days, I often think of Norman Mailer’s comment: “Writers don’t have lifestyles. They sit in little rooms and write.”

And they say “No” to the world, to protect the writing.

---

**CYNTHIA D. BERTELSEN** is a writer and photographer and the associate editor of *Bacopa Literary Review*. Her book, *Mushroom: A Global History*, grew out of her blog, *Gherkins & Tomatoes*. She is at work on a novel inspired by medieval mysticism and herbal healing.
Trying to Conceive

BETHANY MARCEL

It’s not difficult to imagine a line. First, close your eyes. Remember when you were a child and noticed everything about the world: the light stretching just so across the baseball field, the white dog fur on the kitchen floor, the map-like lines on your mother’s stomach.

It can’t be that hard to see a line.

Open your eyes. Do you see it yet?

Hold it up to the window. To the bedroom lamp. You’re searching for light. Take it outside. Squint harder.

Tell your husband, I think I see something. Watch as he squints. I don’t see it, he says. Get angry with him. Think how you always notice what he doesn’t: the new restaurant downtown, your friend’s haircut. Hold it closer to his face. Does he see it now? How about now?
Hold it closer still so that it’s almost touching the tip of his nose. Say, *Try pretending it’s a Magic Eye.* When he says, *What’s a Magic Eye?* try really, really hard not to get upset.

Count the days.
Twelve after.
Three before.
Count them again.
(Just to make sure.)
Twelve after.
Three before.
Memorize the calendar.

Call your best friend. Call your sister. Ask when they first saw their line, the one so thick and obvious no one could have doubted it.

Do not call your mother. You know she’s already knitting. You’ve seen it—the products of her excitement—and you don’t want to get her hopes up any more than you already have.

Buy your husband a new pair of glasses.

Lift your shirt and squeeze your breasts. Walk around the house carrying your breasts like two swollen grapefruits. How do they feel? Are they heavy? Are they hard, like cantaloupes? Wonder if you’ve ever really noticed your breasts before this. The areola, the bumps. What are the bumps called again? Have the veins always been there? Have your breasts always been this large? Poke them. But not too hard.

Make cookies. Decide they don’t sound good anymore. But don’t cookies always sound good? Note this.

Search for more lines. Drive to the grocery store to find them. At the store, notice the lines everywhere.

The lines of mass-produced products.

The lines of people at the checkout stands.

Feel suddenly dizzy.

Maybe it’s all the lines.

But maybe it’s not.

On the drive home, notice the overwhelming scent of cilantro. Realize the cilantro is in the trunk of the car. Aha! Your sense of smell is at an all-time high. Realize it’s actually your fingertips: you touched the cilantro at the store, and now your fingers smell like the
unmistakable scent of cilantro. Say either, Shucks, or—if you’re so inclined—Fuck.

Begin laughing so hard your belly hurts (or is that why your belly hurts?).

Or begin crying (or is that why you’re crying?).

Do whatever it is you need to do. Call your mother after all. She loves you more than you could possibly know. When you get home, wash your hands.

Get on the Internet. Know it’s a mistake. Get on it anyway. Search for signs.

_Twitch in the abdomen._

_Hot flashes._

_Headaches._

_Earaches._

_Breasts feel weird._

Say aloud, “I am a rational woman.”

Search for _Is noticing the scent of cilantro a sign?_

Eat a cookie. Eat two cookies, or twelve. Bake some more because baking soothes you and you need to do what soothes you.

Go to bed. In the darkness of the bedroom, reach out for your husband. Feel the lines of your two bodies against each other. Think how perfectly they fit.

Wake early the next morning, before anyone else in the house has stirred. Tiptoe into the bathroom, locking the door behind you. You don’t want your husband to see you. Not this time. Think how you must look. How the sight must be almost humorous—you squatting over a cup and pissing. Your oversized T-shirt skirting the floor. Your sallow face and your tangled lioness hair. Tell yourself you are wild and fierce and even perfect. Know it’s fine if you actually feel like you are failing or broken or a total asshole.

Know you are perfect anyway.

Now, close your eyes. Remember the day you first rode your bike without holding on—Look, you said. _No hands._ Think about how, after that, you could ride your bike for hours without ever touching the handles. Repeat this to yourself: _If not today, tomorrow. If not this month, next._ Whisper it so that no one else in the entire world can possibly hear it. Whisper it so quietly that it’s almost as untraceable as the line only you could see.

Wait five minutes.

Then look.
WilliamReagan The cook opines on politics as she preps the kitchen. Bartender nods, says nothing, a choir of one who's heard this sermon before.
19 Jul 17

AngeleOutWest "The middle of nowhere is actually somewhere, you know." - Callum, my almost 8-year-old son.
10 Jul 17

gregmarshall My mom, bald from chemo for much of her adult life, loves the smell of hairspray. "It reminds me of health," she says.
1 Aug 17

ConnieKuhns My magazine subscription says "TIME IS RUNNING OUT." I couldn't have said it better.
20 Jun 17

victoria_stopp Otis lowers his graying snout to sniff a leaf. I tell him we're okay, then wonder if parents lie to their kids like I lie to him.
6 Jul 17

ChrisGNguyen Helping clear out a friend's mom's home. Neighbours stream through, curious about her decor. Where were they when she was alive?
22 Jul 17

shuniahwriter Typical statement this rainy summer: "You can use either lawnmower. It's too wet for that old one to catch on fire."
23 Jul 17

onlydavesmith 14 days vacation abroad. Two sons. 1000 rapid fire questions. One answer. "I don't know. I've never been here before."
22 Jul 17

drhoopie I take my daily walk. My brother died last week; our cat, yesterday. Empty of head and heart, I plod on. I take my daily walk.
17 Jul 17

KtchnSnc It doesn't matter how I say it. You hear what you think I mean.
20 Jun 17

miranda_write After the funeral, I chat with extended family. "We should do this under happier circumstances!" Instead we wait for the next one.
9 Aug 17

karengreeners Soft & gentle, the song was like a lullaby for waking up instead of falling asleep, & I wondered why we didn't have more of those.
15 Jul 17

kg_waite I walk to the market for free-range chicken, organic, of course. It comes in neat packets, shrink-wrapped in plastic.
22 Jul 17

k_stevoenson01 My dad used to sit in his ratty armchair, blaring the Weather Channel all day. Still not sure why, since he never left the house.
21 Jul 17

satisfiedsarah One's labeled the family scapegoat; the other, mascot. Only 14 months between them, like twins. But they're never loved the same.
16 Jul 17

sevans_writer I read a list of kid jokes aloud, wincing at their bad puns, but my son laughs hard at each and suddenly I find them funny, too.
3 Jul 17

Set_LS Every ding from my phone is torture, sending false hope through my broken heart. It is you? It never is, and never will be again.
1 Aug 17

SusanRogers6 My son texts that another friend took his own life. "Don't worry about me." If only I could cradle him in my arms forever.
3 Aug 17

sweetjesilu I find myself drawn to music of the before: before I was 20, before 9/11, before my bones creaked, before my hair went gray.
30 Jun 17

TheSnatchzilla He leaned on the counter with the cashier saying, "Folks like us gotta work today. Ain't no independence for the poor."
4 Jul 17

kmsmadrone Quicker than a breath her tiny body tumbled off the riser. Time's ticks turned slow, but still I was not fast enough to catch her.
3 Jul 17

lisarin11 If, kneeling in the field, you find that you are crying, never mind. Stuff a warm berry in your mouth. It will pass.
27 Jul 17
Join us in the rarefied air of magical New Mexico or vibrant and ever-changing Cuba for the Writers Lab. Be fully present for a unique educational experience—led by some of the world’s most accomplished writers—that is bound to change your life as a writer and as a person.

Lee Gutkind, Natalie Goldberg, Pam Houston, Kirk Ellis, Margaret Wrinkle, William DeBuys, Sean Kernan, and Hampton Sides, renowned in the literary world, provide daily lessons on the art and craft of writing in a variety of genres and travel destinations. In quiet settings, they encourage constructive conversation and motivate you to muse and write.

CUBA

DECEMBER 10 - 18, 2017
Seeing Your Story Through a New Lens: A Screenwriters Workshop in Cuba with Kirk Ellis

JANUARY 21 - 29, 2018
Writing Havana: An Immersion Class in Place-Based Writing with Pam Houston

FEBRUARY 11 - 19, 2018
Bringing Havana to Life: Creative Nonfiction Immersion with Lee Gutkind

MARCH 11 - 19, 2018
Havana, Cuba: Crafting Nonfiction that Reads Like a Novel with Hampton Sides

SANTA FE

MAY 7 - 10, 2018
Down to the Marrow: A Sit, Walk, Write Retreat with Natalie Goldberg

MAY 14 - 17, 2018
Old Friend From Far Away: The Practice of Writing Memoir with Natalie Goldberg and Robert Wilder

Words + Images: Photography and Storytelling with Tony O'Brien and William DeBuys

A CHANGE OF SETTING HAS THE POWER TO TAKE YOUR WRITING IN NEW DIRECTIONS

writerslab.santafeworkshops.com • 505-983-1400 EXT 111
True stories. Well told.

Delivered quarterly.

SUBSCRIBE TODAY.

Available in print and digitally.

www.creativenonfiction.org/subscribe