

X3 – EXchanging Worldviews, 3: EXamining Reasons Why Religions Persist

Dear: In the previous chapter, I tried to “dig out” reasons why people are religious, and after a lot of effort, I concluded that I don’t really know why: although I expect that the dominant reason is “indoctrination in ignorance”, there seem to be almost as many reasons why people are religious as there are religious people! Upon hearing in my mind your “Thanks a lot grampa!” [Who’s schizophrenic?], for this chapter I want to try to show you some more knowledgeable opinions about both why people are religious and why organized religions persist, in spite of the compelling evidence that all organized religions are “clearly invented balderdash.”

The “more knowledgeable opinions” that I want to show you are from some of the many scientists who, during the past 30-or-so years, have been studying the strange phenomenon known as religion. Most such scientists (and most scientists) aren’t religious – although (as I’ve noted before) some scientists claim to be. That claim, however, actually negates their being scientists, since the *sine qua non* of all scientists is to base decisions on reliable data. Thus, for themselves, scientists dismiss all religions almost instantaneously: “No evidence; no gods; end of story.”

Some evolutionary biologists, however, are intrigued by (and try to answer) questions such as: “Given that all organized religions are clearly invented balderdash, why have they persisted?” Also, psychologists and sociologists pursue such questions as: “What is it about individuals and groups of people that makes them not only susceptible to religious claims but even to have a propensity to be religious?” Neurologists ask even further: “What’s going on in the brains of religious people?” In this chapter, I want to show you, if not “the answers” to such questions, then at least some tentative opinions that have been formed from examining appropriate data.

Actually, though, the bulk of what I want to show you is not from my review of current studies of religions but from the investigations of two, brilliant science-writers, namely, Sharon Begley (first with *Newsweek*, then with *The Wall Street Journal*, and as I write this, now back at *Newsweek*) and Robin Marantz Henic who writes for *The New York Times*.

I'll start by providing you the treat of reading one of Sharon's article (which you can find at many locations on the internet) that deals with what seems to be occurring in the brains of people who are, not just religious in the common sense, but "mystical" (i.e., what Christians commonly describe as being in "a state of grace").

Religion and the Brain

By SHARON BEGLEY

Published 7 May 2001

Newsweek

One Sunday morning in March, 19 years ago, as Dr. James Austin waited for a train in London, he glanced away from the tracks toward the river Thames. The neurologist – who was spending a sabbatical year in England – saw nothing out of the ordinary: the grimy Underground station, a few dingy buildings, some pale gray sky. He was thinking, a bit absent-mindedly, about the Zen Buddhist retreat he was headed toward. And then Austin suddenly felt a sense of enlightenment unlike anything he had ever experienced. His sense of individual existence, of separateness from the physical world around him, evaporated like morning mist in a bright dawn. He saw things "as they really are," he recalls. The sense of "I, me, mine" disappeared. "Time was not present," he says. "I had a sense of eternity. My old yearnings, loathings, fear of death, and insinuations of selfhood vanished. I had been graced by a comprehension of the ultimate nature of things."

Call it a mystical experience, a spiritual moment, even a religious epiphany, if you like – but Austin will not. Rather than interpret his instant of grace as proof of a reality beyond the comprehension of our senses, much less as proof of a deity, Austin took it as "proof of the existence of the brain." He isn't being smart-alecky. As a neurologist, he accepts that all we see, hear, feel and think is mediated or created by the brain. Austin's moment in the Underground therefore inspired him to explore the neurological underpinnings of spiritual and mystical experience.

In order to feel that time, fear, and self-consciousness have dissolved, he reasoned, certain brain circuits must be interrupted. Which ones? Activity in the amygdala, which monitors the environment for threats and registers fear, must be damped. Parietal-lobe circuits, which orient you in space and mark the sharp distinction between self and world, must go quiet. Frontal- and temporal-lobe circuits, which mark time and generate self-awareness, must disengage.

When that happens, Austin concludes in a recent paper, "what we think of as our 'higher' functions of selfhood appear briefly to 'drop out,' 'dissolve,' or be 'deleted from consciousness'." When he spun out his theories in 1998, in the 844-page *Zen and the Brain*, it was published not by some flaky New Age outfit but by MIT Press.

Since then, more and more scientists have flocked to “neurotheology,” the study of the neurobiology of religion and spirituality. Last year the American Psychological Association published *Varieties of Anomalous Experience*, covering enigmas from near-death experiences to mystical ones.

At Columbia University’s new Center for the Study of Science and Religion, one program investigates how spiritual experiences reflect “peculiarly recurrent events in human brains.” In December, the scholarly *Journal of Consciousness Studies* devoted its issue to religious moments ranging from “Christic visions” to “shamanic states of consciousness.” In May the book *Religion in Mind*, tackling subjects such as how religious practices act back on the brain’s frontal lobes to inspire optimism and even creativity, reaches stores.

And in *Why God Won’t Go Away*, published in April, Dr. Andrew Newberg of the University of Pennsylvania and his late collaborator, Eugene d’Aquili, use brain-imaging data they collected from Tibetan Buddhists lost in meditation and from Franciscan nuns deep in prayer to... well, what they do involves a lot of neuro-jargon about lobes and fissures.

In a nutshell, though, they use the data to identify what seems to be the brain’s spirituality circuit, and to explain how it is that religious rituals have the power to move believers and nonbelievers alike.

Outside of Time and Space

What all the new research shares is a passion for uncovering the neurological underpinnings of spiritual and mystical experiences – for discovering, in short, what happens in our brains when we sense that we “have encountered a reality different from – and, in some crucial sense, higher than – the reality of everyday experience,” as psychologist David Wulff of Wheaton College in Massachusetts puts it. In neurotheology, psychologists and neurologists try to pinpoint which regions turn on, and which turn off, during experiences that seem to exist outside time and space.

In this way it differs from the rudimentary research of the 1950s and 1960s that found, yeah, brain waves change when you meditate. But that research was silent on why brain waves change, or which specific regions in the brain lie behind the change.

Neuroimaging of a living, working brain simply didn’t exist back then. In contrast, today’s studies try to identify the brain circuits that surge with activity when we think we have encountered the divine, and when we feel transported by intense prayer, an uplifting ritual or sacred music.

Although the field is brand new and the answers only tentative, one thing is clear. Spiritual experiences are so consistent across cultures, across time and across faiths, says Wulff, that it “suggest[s] a common core that is likely a reflection of structures and processes in the human brain.”

“There was a feeling of energy centered within me... going out to infinite space and returning... There was a relaxing of the dualistic mind, and an intense feeling of love. I felt a profound letting go of the boundaries around me, and a connection with some kind of energy and state of being that had a quality of clarity, transparency and joy.

“I felt a deep and profound sense of connection to everything, recognizing that there never was a true separation at all.”

That is how Dr. Michael J. Baime, a colleague of Andrew Newberg’s at Penn, describes what he feels at the moment of peak transcendence when he practices Tibetan Buddhist meditation, as he has since he was 14 in 1969.

Baime offered his brain to Newberg, who, since childhood, had wondered about the mystery of God’s existence. At Penn, Newberg’s specialty is radiology, so he teamed with Eugene d’Aquili to use imaging techniques to detect which regions of the brain are active during spiritual experiences. The scientists recruited Baime and seven other Tibetan Buddhists, all skilled meditators.

Testing for the Timeless and Infinite

In a typical run, Baime settled onto the floor of a small darkened room, lit only by a few candles and filled with jasmine incense. A string of twine lay beside him. Concentrating on a mental image, he focused and focused, quieting his conscious mind (he told the scientists afterward) until something he identifies as his true inner self emerged.

It felt “timeless and infinite,” Baime said afterward, “a part of everyone and everything in existence.” When he reached the “peak” of spiritual intensity, he tugged on the twine. Newberg, huddled outside the room and holding the other end, felt the pull and quickly injected a radioactive tracer into an IV line that ran into Baime’s left arm. After a few moments, he whisked Baime off to a SPECT (single photon emission computed tomography) machine.

By detecting the tracer, it tracks blood flow in the brain. Blood flow correlates with neuronal activity. Linked to concentration, the frontal lobe lights up during meditation

The SPECT images are as close as scientists have come to snapping a photo of a transcendent experience. As expected, the prefrontal cortex, seat of attention, lit up: Baime, after all, was focusing deeply. But it was a quieting of activity that stood out. A bundle of neurons in the superior parietal lobe, toward the top and back of the brain, had gone dark.

This region, nicknamed the “orientation association area,” processes information about space and time, and the orientation of the body in space.

It determines where the body ends and the rest of the world begins. Specifically, the left orientation area creates the sensation of a physically delimited body; the right orientation area creates the sense of the physical space in which the body exists. (An injury to this area can so cripple your ability to maneuver in physical space that you cannot figure the distance and angles needed to navigate the route to a chair across the room.)

Self and Not-self

The orientation area requires sensory input to do its calculus.

“If you block sensory inputs to this region, as you do during the intense concentration of meditation, you prevent the brain from forming the distinction between self and not-self,” says Newberg.

With no information from the senses arriving, the left orientation area cannot find any boundary between the self and the world. As a result, the brain seems to have no choice but “to perceive the self as endless and intimately interwoven with everyone and everything,” Newberg and d’Aquili write in *Why God Won’t Go Away*.

The right orientation area, equally bereft of sensory data, defaults to a feeling of infinite space. The meditators feel that they have touched infinity.

“I felt communion, peace, openness to experience... [There was] an awareness and responsiveness to God’s presence around me, and a feeling of centering, quieting, nothingness, [as well as] moments of fullness of the presence of God. [God was] permeating my being.”

This is how her 45-minute prayer made Sister Celeste, a Franciscan nun, feel, just before Newberg SPECT-scanned her. During her most intensely religious moments, when she felt a palpable sense of God’s presence and an absorption of her self into his being, her brain displayed changes like those in the Tibetan Buddhist meditators: her orientation area went dark.

What Sister Celeste and the other nuns in the study felt, and what the meditators experienced, Newberg emphasizes, “were neither mistakes nor wishful thinking. They reflect real, biologically based events in the brain.” The fact that spiritual contemplation affects brain activity gives the experience a reality that psychologists and neuroscientists had long denied it, and explains why people experience ineffable, transcendent events as equally real as seeing a wondrous sunset or stubbing their toes.

Pinpointing Spiritual Experience

That a religious experience is reflected in brain activity is not too surprising, actually. Everything we experience – from the sound of thunder to the sight of a poodle, the feeling of fear and the thought of a polka-dot castle – leaves a trace on the brain. Neurotheology is stalking bigger game than simply affirming that spiritual feelings leave neural footprints, too.

By pinpointing the brain areas involved in spiritual experiences and tracing how such experiences arise, the scientists hope to learn whether anyone can have such experiences, and why spiritual experiences have the qualities they do.

“I could hear the singing of the planets, and wave after wave of light washed over me. But... I was the light as well... I no longer existed as a separate ‘I’... I saw into the structure of the universe. I had the impression of knowing beyond knowledge and being given glimpses into ALL.”

That was how author Sophy Burnham described her experience at Machu Picchu, in her 1997 book *The Ecstatic Journey*. Although there was no scientist around to whisk her into a SPECT machine and confirm that her orientation area was AWOL, it was almost certainly quiescent.

That said, just because an experience has a neural correlate does not mean that the experience exists “only” in the brain, or that it is a figment of brain activity with no independent reality.

Think of what happens when you dig into an apple pie. The brain’s olfactory region registers the aroma of the cinnamon and fruit. The somatosensory cortex processes the feel of the flaky crust on the tongue and lips. The visual cortex registers the sight of the pie. Remembrances of pies past (Grandma’s kitchen, the corner bake shop...) activate association cortices.

A neuroscientist with too much time on his hands could undoubtedly produce a PET scan of “your brain on apple pie.” But that does not negate the reality of the pie. “The fact that spiritual experiences can be associated with distinct neural activity does not necessarily mean that such experiences are mere neurological illusions,” Newberg insists.

“It’s no safer to say that spiritual urges and sensations are caused by brain activity than it is to say that the neurological changes through which we experience the pleasure of eating an apple cause the apple to exist.” The bottom line, he says, is that “there is no way to determine whether the neurological changes associated with spiritual experience mean that the brain is causing those experiences... or is instead perceiving a spiritual reality.”

Producing Visions

In fact, some of the same brain regions involved in the pie experience create religious experiences, too. When the image of a cross, or a Torah crowned in silver, triggers a sense of religious awe, it is because the brain’s visual-association area, which interprets what the eyes see and connects images to emotions and memories, has learned to link those images to that feeling.

Visions that arise during prayer or ritual are also generated in the association area: electrical stimulation of the temporal lobes (which nestle along the sides of the head and house the circuits responsible for language, conceptual thinking and associations) produces visions.

Temporal-lobe epilepsy – abnormal bursts of electrical activity in these regions – takes this to extremes. Although some studies have cast doubt on the connection between temporal-lobe epilepsy and religiosity, others find that the condition seems to trigger vivid, Joan of Arc-type religious visions and voices.

In his recent book *Lying Awake*, novelist Mark Salzman conjures up the story of a cloistered nun who, after years of being unable to truly feel the presence of God, begins having visions.

The cause is temporal-lobe epilepsy. Sister John of the Cross must wrestle with whether to have surgery, which would probably cure her – but would also end her visions. Dostoevsky, Saint Paul, Saint Teresa of Avila, Proust and others are thought to have had temporal-lobe epilepsy, leaving them obsessed with matters of the spirit.

Although temporal-lobe epilepsy is rare, researchers suspect that focused bursts of electrical activity called “temporal-lobe transients” may yield mystical experiences.

To test this idea, Michael Persinger of Laurentian University in Canada fits a helmet jury-rigged with electromagnets onto a volunteer’s head. The helmet creates a weak magnetic field, no stronger than that produced by a computer monitor.

The field triggers bursts of electrical activity in the temporal lobes, Persinger finds, producing sensations that volunteers describe as supernatural or spiritual: an out-of-body experience, a sense of the divine.

He suspects that religious experiences are evoked by mini electrical storms in the temporal lobes, and that such storms can be triggered by anxiety, personal crisis, lack of oxygen, low blood sugar and simple fatigue – suggesting a reason that some people “find God” in such moments.

Why the temporal lobes? Persinger speculates that our left temporal lobe maintains our sense of self. When that region is stimulated but the right stays quiescent, the left interprets this as a sensed presence, as the self departing the body, or of God.

“I was alone upon the seashore... I felt that I... return[ed] from the solitude of individuation into the consciousness of unity with all that is... Earth, heaven, and sea resounded as in one vast world encircling harmony... I felt myself one with them.”

Is an experience like this one, described by the German philosopher Malwida von Meysenburg in 1900, within the reach of anyone? “Not everyone who meditates

encounters these sorts of unitive experiences,” says Robert K.C. Forman, a scholar of comparative religion at Hunter College in New York City.

“This suggests that some people may be genetically or temperamentally predisposed to mystical ability.” Those most open to mystical experience tend also to be open to new experiences generally. They are usually creative and innovative, with a breadth of interests and a tolerance for ambiguity (as determined by questionnaire).

They also tend toward fantasy, notes David Wulff, “suggesting a capacity to suspend the judging process that distinguishes imaginings and real events.” Since “we all have the brain circuits that mediate spiritual experiences, probably most people have the capacity for having such experiences,” says Wulff. “But it’s possible to foreclose that possibility. If you are rational, controlled, not prone to fantasy, you will probably resist the experience.”

Measuring Spiritual Force

In survey after survey since the 1960s, between 30 and 40 percent or so of those asked say they have, at least once or twice, felt “very close to a powerful, spiritual force that seemed to lift you out of yourself.”

Gallup polls in the 1990s found that 53 percent of American adults said they had had “a moment of sudden religious awakening or insight.” Reports of mystical experience increase with education, income and age (people in their 40s and 50s are most likely to have them).

Yet many people seem no more able to have such an experience than to fly to Venus. One explanation came in 1999, when Australian researchers found that people who report mystical and spiritual experiences tend to have unusually easy access to subliminal consciousness. “In people whose unconscious thoughts tend to break through into consciousness more readily, we find some correlation with spiritual experiences,” says psychologist Michael Thalbourne of the University of Adelaide.

Unfortunately, scientists are pretty clueless about what allows subconscious thoughts to pop into the consciousness of some people and not others. The single strongest predictor of such experiences, however, is something called “dissociation.”

In this state, different regions of the brain disengage from others. “This theory, which explains hypnotizability so well, might explain mystical states, too,” says Michael Shermer, director of the Skeptics Society, which debunks paranormal phenomena. “Something really seems to be going on in the brain, with some module dissociating from the rest of the cortex.”

The Neural Basis for Religious Experience

That dissociation may reflect unusual electrical crackling in one or more brain regions. In 1997, neurologist Vilayanur Ramachandran told the annual meeting of the Society for Neuroscience that there is “a neural basis for religious experience.”

His preliminary results suggested that depth of religious feeling, or religiosity, might depend on natural – not helmet-induced – enhancements in the electrical activity of the temporal lobes. Interestingly, this region of the brain also seems important for speech perception. One experience common to many spiritual states is hearing the voice of God.

It seems to arise when you misattribute inner speech (the “little voice” in your head that you know you generate yourself) to something outside yourself. During such experiences, the brain’s Broca’s area (responsible for speech production) switches on.

Most of us can tell this is our inner voice speaking. But when sensory information is restricted, as happens during meditation or prayer, people are “more likely to misattribute internally generated thoughts to an external source,” suggests psychologist Richard Bentall of the University of Manchester in England in the book *Varieties of Anomalous Experience*.

Stress and emotional arousal can also interfere with the brain’s ability to find the source of a voice, Bentall adds. In a 1998 study, researchers found that one particular brain region, called the right anterior cingulate, turned on when people heard something in the environment – a voice or a sound – and also when they hallucinated hearing something. But it stayed quiet when they imagined hearing something and thus were sure it came from their own brain. This region, says Bentall, “may contain the neural circuits responsible for tagging events as originating from the external world.” When it is inappropriately switched on, we are fooled into thinking the voice we hear comes from outside us.

Even people who describe themselves as nonspiritual can be moved by religious ceremonies and liturgy. Hence the power of ritual. Drumming, dancing, incantations – all rivet attention on a single, intense source of sensory stimulation, including the body’s own movements. They also evoke powerful emotional responses. That combination – focused attention that excludes other sensory stimuli, plus heightened emotion – is key.

Together, they seem to send the brain’s arousal system into hyperdrive, much as intense fear does. When this happens, explains Newberg, one of the brain structures responsible for maintaining equilibrium – the hippocampus – puts on the brakes. It inhibits the flow of signals between neurons, like a traffic cop preventing any more cars from entering the on-ramp to a tied-up highway.

“Softening of the Boundaries of the Self”

The result is that certain regions of the brain are deprived of neuronal input. One such deprived region seems to be the orientation area, the same spot that goes quiet during meditation and prayer. As in those states, without sensory input the orientation area cannot do its job of maintaining a sense of where the self leaves off and the world begins.

That's why ritual and liturgy can bring on what Newberg calls a "softening of the boundaries of the self" – and the sense of oneness and spiritual unity. Slow chanting, elegiac liturgical melodies and whispered ritualistic prayer all seem to work their magic in much the same way: they turn on the hippocampus directly and block neuronal traffic to some brain regions. The result again is "blurring the edges of the brain's sense of self, opening the door to the unitary states that are the primary goal of religious ritual," says Newberg.

Researchers' newfound interest in neurotheology reflects more than the availability of cool new toys to peer inside the working brain. Psychology and neuroscience have long neglected religion.

Despite its centrality to the mental lives of so many people, religion has been met by what David Wulff calls "indifference or even apathy" on the part of science. When one psychologist, a practicing Christian, tried to discuss in his introductory psych book the role of faith in people's lives, his publisher edited out most of it – for fear of offending readers.

The rise of neurotheology represents a radical shift in that attitude. And whatever light science is shedding on spirituality, spirituality is returning the favor: mystical experiences, says Forman, may tell us something about consciousness, arguably the greatest mystery in neuroscience. "In mystical experiences, the content of the mind fades, sensory awareness drops out, so you are left only with pure consciousness," says Forman. "This tells you that consciousness does not need an object, and is not a mere byproduct of sensory action."

For all the tentative successes that scientists are scoring in their search for the biological bases of religious, spiritual and mystical experience, one mystery will surely lie forever beyond their grasp. They may trace a sense of transcendence to this bulge in our gray matter. And they may trace a feeling of the divine to that one. But it is likely that they will never resolve the greatest question of all – namely, whether our brain wiring creates God, or whether God created our brain wiring. Which you believe is, in the end, a matter of faith.

As I mentioned in an earlier chapter, I'm one of Sharon Begley's biggest fans – having now written "fan letters" both to her and to her editor (when she was writing a weekly article on science for the *Wall Street Journal*) and having now even received multiple letters back from her. But as much as I admire her, I sure don't like the last paragraph in the above quotation from *Newsweek* – especially the last two sentences. It reminds me of the last paragraph in what I consider to be the best book in the Bible, *Ecclesiastes*: I'd bet good money on the possibility that it was added by some editor (or "redactor") who tried to put a different spin on the rest of the text.

* Go to other chapters via

Dear: The answer to the question that Sharon posed is not (as given in her article) a matter of “faith”, because it’s quite impossible to find the answer to any question by faith – in spite of what you’ve been taught since you were a child. Claims of “faith-based decisions” are ruses for decisions based on reasons (such as indoctrination, emotions, inertia...) that people fail to identify (for a variety of reasons). In particular, making a decision about “whether our brain wiring creates God, or whether God created our brain wiring” depends on whether one chooses to base decisions on the scientific method or on fairy tales. In his book *Holy Daze: Coming to Grips with “Religion,” the Holy Daze of Humanity*, Chester Dolan said it well:¹

Reason and faith are completely irreconcilable pathways to knowledge. The two cannot exist side by side. Reason underlies the methodology of the scientist. Without it he would be ineffectual. Faith is the “being” of the ‘religionist.’ Without it he could not exist. The scientist accepts nothing on faith. Faith to him is a synonym for belief. In *Hebrews 11*, 1 we read: “Faith is the substance of things desired, the evidence of things unseen.” The ‘religionist’ is ever alert to prevent reason from undermining his precepts. Reason is his (and God’s) worst enemy. Reason is our means of processing what we learn of the world through our proverbial five senses. Faith does no processing; whatever sense (or nonsense) is accepted as is, without rational consideration. Those facts which reason allows us to accept must display consistency and predictability. There are no criteria to restrict that which we will accept on faith... Those content to accept on faith are those who accept without thinking, without the rational demonstrations that establish the truth (predictive content) of what we believe. Faith is the road to myth and error, the way to add to man’s already overflowing storehouse of “things he *knows* but that are not so”.

But setting that criticism aside, Dear, I trust you were impressed by Sharon’s report on progress made understanding activities in the brain associated with “religious” (or “mystical”) experiences. Further, I was startled by the data in her statement:

In survey after survey since the 1960s, between 30 and 40 percent or so of those asked say they have, at least once or twice, felt “very close to a powerful, spiritual force that seemed to lift you out of yourself.”

Gallup polls in the 1990s found that 53 percent of American adults said they had had “a moment of sudden religious awakening or insight.” Reports of mystical experience increase with education, income and age (people in their 40s and 50s are most likely to have them).

¹ In the section on “Faith”, pp. 130-135, MOPAH Publications.

If those data are reliable (e.g., if there's no sampling bias, either from how the questions were asked or who was questioned, e.g., users of illegal drugs), then the results challenge my expectation that “the dominant reason why most people are religious is ‘indoctrination in ignorance’.” Yet, I wouldn't be surprised if a substantial fraction of all people who have had such “mystical experiences” don't then affiliate with some organized religion (such as Christianity, Islam, Mormonism, etc.), but instead, continue on their own (e.g., in Zen) or become affiliated with one of the “new-age religions”,² which are typically unorganized (even “disorganized”!) and neither steeped in the moldy dogma from the Middle East contained in our culture's “holy books” nor polluted with parasitic priesthods.

Anyway Dear, my second treat for you is to invite you to read the following great article by Robin Marantz Henig. In this article, she doesn't examine (as did Sharon) current understanding of what's occurring in the brains of “truly religious” people; instead, she examines current understanding of why religions persist (in spite of their being “[clearly invented balderdash](#)”).

Darwin's God

By ROBIN MARANTZ HENIG

Published 4 March 2007

*The New York Times*³

God has always been a puzzle for Scott Atran. When he was 10 years old, he scrawled a plaintive message on the wall of his bedroom in Baltimore. “God exists,” he wrote in black and orange paint, “or if he doesn't, we're in trouble.” Atran has been struggling with questions about religion ever since – why he himself no longer believes in God and why so many other people, everywhere in the world, apparently do.

Call it God; call it superstition; call it, as Atran does, “belief in hope beyond reason” – whatever you call it, there seems an inherent human drive to believe in something transcendent, unfathomable and otherworldly, something beyond the reach or understanding of science. “Why do we cross our fingers during turbulence, even the most atheistic among us?” asked Atran when we spoke at his Upper West Side pied-à-terre in January.

² For example, see http://en.wikipedia.org/wiki/New_Age.

³ Copied from

<http://www.nytimes.com/2007/03/04/magazine/04evolution.t.html?ei=5090&en=43cfb46824423cea&ex=1330664400>.

Atran, who is 55, is an anthropologist at the National Center for Scientific Research in Paris, with joint appointments at the University of Michigan and the John Jay College of Criminal Justice in New York. His research interests include cognitive science and evolutionary biology, and sometimes he presents students with a wooden box that he pretends is an African relic. “If you have negative sentiments toward religion,” he tells them, “the box will destroy whatever you put inside it.” Many of his students say they doubt the existence of God, but in this demonstration they act as if they believe in something. Put your pencil into the magic box, he tells them, and the nonbelievers do so blithely. Put in your driver’s license, he says, and most do, but only after significant hesitation. And when he tells them to put in their hands, few will.

If they don’t believe in God, what exactly are they afraid of?

Atran first conducted the magic-box demonstration in the 1980s, when he was at Cambridge University studying the nature of religious belief. He had received a doctorate in anthropology from Columbia University and, in the course of his fieldwork, saw evidence of religion everywhere he looked – at archaeological digs in Israel, among the Mayans in Guatemala, in artifact drawers at the American Museum of Natural History in New York. Atran is Darwinian in his approach, which means he tries to explain behavior by how it might once have solved problems of survival and reproduction for our early ancestors. But it was not clear to him what evolutionary problems might have been solved by religious belief. Religion seemed to use up physical and mental resources without an obvious benefit for survival. Why, he wondered, was religion so pervasive, when it was something that seemed so costly from an evolutionary point of view?

The magic-box demonstration helped set Atran on a career studying why humans might have evolved to be religious, something few people were doing back in the ‘80s. Today, the effort has gained momentum, as scientists search for an evolutionary explanation for why belief in God exists – not whether God exists, which is a matter for philosophers and theologians, but why the belief does.

This is different from the scientific assault on religion that has been garnering attention recently, in the form of best-selling books from scientific atheists who see religion as a scourge. In *The God Delusion*, published last year and still on best-seller lists, the Oxford evolutionary biologist Richard Dawkins concludes that religion is nothing more than a useless, and sometimes dangerous, evolutionary accident. “Religious behavior may be a misfiring, an unfortunate byproduct of an underlying psychological propensity which in other circumstances is, or once was, useful,” Dawkins wrote. He is joined by two other best-selling authors – Sam Harris, who wrote *The End of Faith*, and Daniel Dennett, a philosopher at Tufts University who wrote *Breaking the Spell*. The three men differ in their personal styles and whether they are engaged in a battle against religiosity, but their names are often mentioned together. They have been portrayed as an unholy trinity of neo-atheists, promoting their secular worldview with a fervor that seems almost evangelical.

Lost in the hullabaloo over the neo-atheists is a quieter and potentially more illuminating debate. It is taking place not between science and religion but within science itself, specifically among the scientists studying the evolution of religion. These scholars tend to agree on one point: that religious belief is an outgrowth of brain architecture that evolved during early human history. What they disagree about is why a tendency to believe evolved, whether it was because belief itself was adaptive or because it was just an evolutionary byproduct, a mere consequence of some other adaptation in the evolution of the human brain.

Which is the better biological explanation for a belief in God – evolutionary adaptation or neurological accident? Is there something about the cognitive functioning of humans that makes us receptive to belief in a supernatural deity? And if scientists are able to explain God, what then? Is explaining religion the same thing as explaining it away? Are the nonbelievers right, and is religion at its core an empty undertaking, a misdirection, a vestigial artifact of a primitive mind? Or are the believers right, and does the fact that we have the mental capacities for discerning God suggest that it was God who put them there?

In short, are we hard-wired to believe in God? And if we are, how and why did that happen?

“All of our raptures and our drynesses, our longings and pantings, our questions and beliefs... are equally organically founded,” William James wrote in *The Varieties of Religious Experience*. James, who taught philosophy and experimental psychology at Harvard for more than 30 years, based his book on a 1901 lecture series in which he took some early tentative steps at breaching the science-religion divide.

In the century that followed, a polite convention generally separated science and religion, at least in much of the Western world. Science, as the old trope had it, was assigned the territory that describes how the heavens go; religion, how to go to heaven.

Anthropologists like Atran and psychologists as far back as James had been looking at the roots of religion, but the mutual hands-off policy really began to shift in the 1990s. Religion made incursions into the traditional domain of science with attempts to bring intelligent design into the biology classroom and to choke off human embryonic stem-cell research on religious grounds. Scientists responded with counterincursions. Experts from the hard sciences, like evolutionary biology and cognitive neuroscience, joined anthropologists and psychologists in the study of religion, making God an object of scientific inquiry.

The debate over why belief evolved is between byproduct theorists and adaptationists. You might think that the byproduct theorists would tend to be nonbelievers, looking for a way to explain religion as a fluke, while the adaptationists would be more likely to be believers who can intuit the emotional, spiritual and community advantages that

accompany faith. Or you might think they would all be atheists, because what believer would want to subject his own devotion to rationalism's cold, hard scrutiny? But a scientist's personal religious view does not always predict which side he will take. And this is just one sign of how complex and surprising this debate has become.

Angels, demons, spirits, wizards, gods and witches have peppered folk religions since mankind first started telling stories. Charles Darwin noted this in *The Descent of Man*. "A belief in all-pervading spiritual agencies," he wrote, "seems to be universal." According to anthropologists, religions that share certain supernatural features – belief in a noncorporeal God or gods, belief in the afterlife, belief in the ability of prayer or ritual to change the course of human events – are found in virtually every culture on earth.

This is certainly true in the United States. About 6 in 10 Americans, according to a 2005 Harris Poll, believe in the devil and hell, and about 7 in 10 believe in angels, heaven and the existence of miracles and of life after death. A 2006 survey at Baylor University found that 92 percent of respondents believe in a personal God – that is, a God with a distinct set of character traits ranging from "distant" to "benevolent."

When a trait is universal, evolutionary biologists look for a genetic explanation and wonder how that gene or genes might enhance survival or reproductive success. In many ways, it's an exercise in post-hoc hypothesizing: what would have been the advantage, when the human species first evolved, for an individual who happened to have a mutation that led to, say, a smaller jaw, a bigger forehead, a better thumb? How about certain behavioral traits, like a tendency for risk-taking or for kindness?

Atran saw such questions as a puzzle when applied to religion. So many aspects of religious belief involve misattribution and misunderstanding of the real world. Wouldn't this be a liability in the survival-of-the-fittest competition? To Atran, religious belief requires taking "what is materially false to be true" and "what is materially true to be false."

One example of this is the belief that even after someone dies and the body demonstrably disintegrates, that person will still exist, will still be able to laugh and cry, to feel pain and joy. This confusion "does not appear to be a reasonable evolutionary strategy," Atran wrote in *In Gods We Trust: The Evolutionary Landscape of Religion* in 2002. "Imagine another animal that took injury for health or big for small or fast for slow or dead for alive. It's unlikely that such a species could survive." He began to look for a sideways explanation: if religious belief was not adaptive, perhaps it was associated with something else that was.

Atran intended to study mathematics when he entered Columbia as a precocious 17-year-old. But he was distracted by the radical politics of the late '60s. One day in his freshman year, he found himself at an antiwar rally listening to Margaret Mead, then perhaps the most famous anthropologist in America. Atran, dressed in a flamboyant Uncle Sam suit, stood up and called her a sellout for saying the protesters should be

writing to their congressmen instead of staging demonstrations. “Young man,” the unflappable Mead said, “why don’t you come see me in my office?” Atran, equally unflappable, did go to see her – and ended up working for Mead, spending much of his time exploring the cabinets of curiosities in her tower office at the American Museum of Natural History. Soon he switched his major to anthropology.

Many of the museum specimens were religious, Atran says. So were the artifacts he dug up on archaeological excursions in Israel in the early ‘70s. Wherever he turned, he encountered the passion of religious belief. Why, he wondered, did people work so hard against their preference for logical explanations to maintain two views of the world, the real and the unreal, the intuitive and the counterintuitive?

Maybe cognitive effort was precisely the point. Maybe it took less mental work than Atran realized to hold belief in God in one’s mind. Maybe, in fact, belief was the default position for the human mind, something that took no cognitive effort at all.

While still an undergraduate, Atran decided to explore these questions by organizing a conference on universal aspects of culture and inviting all his intellectual heroes: the linguist Noam Chomsky, the psychologist Jean Piaget, the anthropologists Claude Levi-Strauss and Gregory Bateson (who was also Margaret Mead’s ex-husband), the Nobel Prize-winning biologists Jacques Monod and Francois Jacob. It was 1974, and the only site he could find for the conference was at a location just outside Paris. Atran was a scraggly 22-year-old with a guitar who had learned his French from comic books. To his astonishment, everyone he invited agreed to come.

Atran is a sociable man with sharp hazel eyes, who sparks provocative conversations the way other men pick bar fights. As he traveled in the ‘70s and ‘80s, he accumulated friends who were thinking about the issues he was: how culture is transmitted among human groups and what evolutionary function it might serve. “I started looking at history, and I wondered why no society ever survived more than three generations without a religious foundation as its *raison d’être*,” he says. Soon he turned to an emerging subset of evolutionary theory – the evolution of human cognition.⁴

Some cognitive scientists think of brain functioning in terms of modules, a series of interconnected machines, each one responsible for a particular mental trick. They do not tend to talk about a God module per se; they usually consider belief in God a consequence of other mental modules.

⁴ Dear: I feel compelled to add that it’s a wonder that the young Atran survived as a scientist when he started with the thought: “I wondered why no society ever survived more than three generations without a religious foundation as its *raison d’être*.” That’s like wondering why the U.S. has never lost a war when we’ve had a female president! What data are summarized by the speculation? What causal relationship is being proposed? What predictions follow? What do tests of the predictions suggest? Would the young Atran then have proposed that, e.g., Sweden or Japan will not survive for three more generations? I wonder if he would have been willing to wager on that one. I might have been willing to take a little of that action!

Religion, in this view, is “a family of cognitive phenomena that involves the extraordinary use of everyday cognitive processes,” Atran wrote in *In Gods We Trust*. “Religions do not exist apart from the individual minds that constitute them and the environments that constrain them, any more than biological species and varieties exist independently of the individual organisms that compose them and the environments that conform them.”

At around the time *In Gods We Trust* appeared five years ago, a handful of other scientists – Pascal Boyer, now at Washington University; Justin Barrett, now at Oxford; Paul Bloom at Yale – were addressing these same questions. In synchrony they were moving toward the byproduct theory.

Darwinians who study physical evolution distinguish between traits that are themselves adaptive, like having blood cells that can transport oxygen, and traits that are byproducts of adaptations, like the redness of blood. There is no survival advantage to blood’s being red instead of turquoise; it is just a byproduct of the trait that is adaptive, having blood that contains hemoglobin.

Something similar explains aspects of brain evolution, too, say the byproduct theorists. Which brings us to the idea of the spandrel.

Stephen Jay Gould, the famed evolutionary biologist at Harvard who died in 2002, and his colleague Richard Lewontin proposed “spandrel” to describe a trait that has no adaptive value of its own. They borrowed the term from architecture, where it originally referred to the V-shaped structure formed between two rounded arches. The structure is not there for any purpose; it is there because that is what happens when arches align.

In architecture, a spandrel can be neutral or it can be made functional. Building a staircase, for instance, creates a space underneath that is innocuous, just a blank sort of triangle. But if you put a closet there, the under-stairs space takes on a function, unrelated to the staircase’s but useful nonetheless. Either way, functional or nonfunctional, the space under the stairs is a spandrel, an unintended byproduct.

“Natural selection made the human brain big,” Gould wrote, “but most of our mental properties and potentials may be spandrels – that is, nonadaptive side consequences of building a device with such structural complexity.”

The possibility that God could be a spandrel offered Atran a new way of understanding the evolution of religion. But a spandrel of what, exactly?

Hardships of early human life favored the evolution of certain cognitive tools, among them the ability to infer the presence of organisms that might do harm, to come up with causal narratives for natural events, and to recognize that other people have minds of their own with their own beliefs, desires and intentions. Psychologists call these tools, respectively, agent detection, causal reasoning, and theory of mind.

Agent detection evolved because assuming the presence of an agent – which is jargon for any creature with volitional, independent behavior – is more adaptive than assuming its absence. If you are a caveman on the savannah, you are better off presuming that the motion you detect out of the corner of your eye is an agent and something to run from, even if you are wrong. If it turns out to have been just the rustling of leaves, you are still alive; if what you took to be leaves rustling was really a hyena about to pounce, you are dead.

A classic experiment from the 1940s by the psychologists Fritz Heider and Marianne Simmel suggested that imputing agency is so automatic that people may do it even for geometric shapes. For the experiment, subjects watched a film of triangles and circles moving around. When asked what they had been watching, the subjects used words like “chase” and “capture.” They did not just see the random movement of shapes on a screen; they saw pursuit, planning, escape.

So if there is motion just out of our line of sight, we presume it is caused by an agent, an animal or person with the ability to move independently. This usually operates in one direction only; lots of people mistake a rock for a bear, but almost no one mistakes a bear for a rock.

What does this mean for belief in the supernatural? It means our brains are primed for it, ready to presume the presence of agents even when such presence confounds logic. “The most central concepts in religions are related to agents,” Justin Barrett, a psychologist, wrote in his 2004 summary of the byproduct theory, *Why Would Anyone Believe in God?* Religious agents are often supernatural, he wrote, “people with superpowers, statues that can answer requests, or disembodied minds that can act on us and the world.”

A second mental module that primes us for religion is causal reasoning. The human brain has evolved the capacity to impose a narrative, complete with chronology and cause-and-effect logic, on whatever it encounters, no matter how apparently random. “We automatically, and often unconsciously, look for an explanation of why things happen to us,” Barrett wrote, “and ‘stuff just happens’ is no explanation. Gods, by virtue of their strange physical properties and their mysterious superpowers, make fine candidates for causes of many of these unusual events.” The ancient Greeks believed thunder was the sound of Zeus’s thunderbolt. Similarly, a contemporary woman whose cancer treatment works despite 10-to-1 odds might look for a story to explain her survival. It fits better with her causal-reasoning tool for her recovery to be a miracle, or a reward for prayer, than for it to be just a lucky roll of the dice.

A third cognitive trick is a kind of social intuition known as “theory of mind”. It’s an odd phrase for something so automatic, since the word ‘theory’ suggests formality and self-consciousness. Other terms have been used for the same concept, like intentional stance and social cognition. One good alternative is the term Atran uses: folkpsychology.

Folkpsychology, as Atran and his colleagues see it, is essential to getting along in the contemporary world, just as it has been since prehistoric times. It allows us to anticipate the actions of others and to lead others to believe what we want them to believe; it is at the heart of everything from marriage to office politics to poker. People without this trait, like those with severe autism, are impaired, unable to imagine themselves in other people's heads.

The process begins with positing the existence of minds, our own and others', that we cannot see or feel. This leaves us open, almost instinctively, to belief in the separation of the body (the visible) and the mind (the invisible). If you can posit minds in other people that you cannot verify empirically, suggests Paul Bloom, a psychologist and the author of *Descartes' Baby*, published in 2004, it is a short step to positing minds that do not have to be anchored to a body. And from there, he said, it is another short step to positing an immaterial soul and a transcendent God.

The traditional psychological view has been that until about age 4, children think that minds are permeable and that everyone knows whatever the child himself knows. To a young child, everyone is infallible. All other people, especially Mother and Father, are thought to have the same sort of insight as an all-knowing God.

But at a certain point in development, this changes. (Some new research suggests this might occur as early as 15 months.) The "false-belief test" is a classic experiment that highlights the boundary. Children watch a puppet show with a simple plot: John comes onstage holding a marble, puts it in Box A and walks off. Mary comes onstage, opens Box A, takes out the marble, puts it in Box B and walks off. John comes back onstage. The children are asked, Where will John look for the marble?

Very young children, or autistic children of any age, say John will look in Box B, since they know that's where the marble is. But older children give a more sophisticated answer. They know that John never saw Mary move the marble and that as far as he is concerned it is still where he put it, in Box A. Older children have developed a theory of mind; they understand that other people sometimes have false beliefs. Even though they know that the marble is in Box B, they respond that John will look for it in Box A.

The adaptive advantage of folkpsychology is obvious. According to Atran, our ancestors needed it to survive their harsh environment, since folkpsychology allowed them to "rapidly and economically" distinguish good guys from bad guys. But how did folkpsychology – an understanding of ordinary people's ordinary minds – allow for a belief in supernatural, omniscient minds? And if the byproduct theorists are right and these beliefs were of little use in finding food or leaving more offspring, why did they persist?

Atran ascribes the persistence to evolutionary misdirection, which, he says, happens all the time: "Evolution always produces something that works for what it works for,

and then there's no control for however else it's used." On a sunny weekday morning, over breakfast at a French cafe on upper Broadway, he tried to think of an analogy and grinned when he came up with an old standby: women's breasts.

Because they are associated with female hormones, he explained, full breasts indicate a woman is fertile, and the evolution of the male brain's preference for them was a clever mating strategy. But breasts are now used for purposes unrelated to reproduction, to sell anything from deodorant to beer. "A Martian anthropologist might look at this and say, 'Oh, yes, so these breasts must have somehow evolved to sell hygienic stuff or food to human beings'," Atran said. But the Martian would, of course, be wrong. Equally wrong would be to make the same mistake about religion, thinking it must have evolved to make people behave a certain way or feel a certain allegiance.

That is what most fascinated Atran. "Why is God in there?" he wondered.

The idea of an infallible God is comfortable and familiar, something children readily accept. You can see this in the experiment Justin Barrett conducted recently – a version of the traditional false-belief test but with a religious twist. Barrett showed young children a box with a picture of crackers on the outside. What do you think is inside this box? he asked, and the children said, "Crackers." Next he opened it and showed them that the box was filled with rocks. Then he asked two follow-up questions: What would your mother say is inside this box? and What would God say?

As earlier theory-of-mind experiments already showed, 3- and 4-year-olds tended to think Mother was infallible, and since the children knew the right answer, they assumed she would know it, too. They usually responded that Mother would say the box contained rocks. But 5- and 6-year-olds had learned that Mother, like any other person, could hold a false belief in her mind, and they tended to respond that she would be fooled by the packaging and would say, "Crackers."

And what would God say? No matter what their age, the children, who were all Protestants, told Barrett that God would answer, "Rocks." This was true even for the older children, who, as Barrett understood it, had developed folkpsychology and had used it when predicting a wrong response for Mother. They had learned that, in certain situations, people could be fooled – but they had also learned that there is no fooling God.

The bottom line, according to byproduct theorists, is that children are born with a tendency to believe in omniscience, invisible minds, immaterial souls – and then they grow up in cultures that fill their minds, hard-wired for belief, with specifics. It is a little like language acquisition, Paul Bloom says, with the essential difference that language is a biological adaptation and religion, in his view, is not. We are born with an innate facility for language but the specific language we learn depends on the environment in which we are raised. In much the same way, he says, we are born

with an innate tendency for belief, but the specifics of what we grow up believing – whether there is one God or many, whether the soul goes to heaven or occupies another animal after death – are culturally shaped.

Whatever the specifics, certain beliefs can be found in all religions. Those that prevail, according to the byproduct theorists, are those that fit most comfortably with our mental architecture. Psychologists have shown, for instance, that people attend to, and remember, things that are unfamiliar and strange, but not so strange as to be impossible to assimilate. Ideas about God or other supernatural agents tend to fit these criteria. They are what Pascal Boyer, an anthropologist and psychologist, called “minimally counterintuitive”: weird enough to get your attention and lodge in your memory but not so weird that you reject them altogether. A tree that talks is minimally counterintuitive, and you might believe it as a supernatural agent. A tree that talks and flies and time-travels is maximally counterintuitive, and you are more likely to reject it.

Atran, along with Ara Norenzayan of the University of British Columbia, studied the idea of minimally counterintuitive agents earlier this decade. They presented college students with lists of fantastical creatures and asked them to choose the ones that seemed most “religious.” The convincingly religious agents, the students said, were not the most outlandish – not the turtle that chatters and climbs or the squealing, flowering marble – but those that were just outlandish enough: giggling seaweed, a sobbing oak, a talking horse. Giggling seaweed meets the requirement of being minimally counterintuitive, Atran wrote. So does a God who has a human personality except that he knows everything or a God who has a mind but has no body.

It is not enough for an agent to be minimally counterintuitive for it to earn a spot in people’s belief systems. An emotional component is often needed, too, if belief is to take hold. “If your emotions are involved, then that’s the time when you’re most likely to believe whatever the religion tells you to believe,” Atran says. Religions stir up emotions through their rituals – swaying, singing, bowing in unison during group prayer, sometimes working people up to a state of physical arousal that can border on frenzy. And religions gain strength during the natural heightening of emotions that occurs in times of personal crisis, when the faithful often turn to shamans or priests. The most intense personal crisis, for which religion can offer powerfully comforting answers, is when someone comes face to face with mortality.

In John Updike’s celebrated early short story *Pigeon Feathers*, 14-year-old David spends a lot of time thinking about death. He suspects that adults are lying when they say his spirit will live on after he dies. He keeps catching them in inconsistencies when he asks where exactly his soul will spend eternity. “Don’t you see,” he cries to his mother, “if when we die there’s nothing, all your sun and fields and what not are all, ah, horror? It’s just an ocean of horror.”

The story ends with David’s tiny revelation and his boundless relief. The boy gets a gun for his 15th birthday, which he uses to shoot down some pigeons that have been

nesting in his grandmother's barn. Before he buries them, he studies the dead birds' feathers. He is amazed by their swirls of color, "designs executed, it seemed, in a controlled rapture." And suddenly the fears that have plagued him are lifted, and with a "slipping sensation along his nerves that seemed to give the air hands, he was robbed in this certainty: that the God who had lavished such craft upon these worthless birds would not destroy His whole Creation by refusing to let David live forever."

Fear of death is an undercurrent of belief. The spirits of dead ancestors, ghosts, immortal deities, heaven and hell, the everlasting soul: the notion of spiritual existence after death is at the heart of almost every religion. According to some adaptationists, this is part of religion's role, to help humans deal with the grim certainty of death. Believing in God and the afterlife, they say, is how we make sense of the brevity of our time on earth, how we give meaning to this brutish and short existence. Religion can offer solace to the bereaved and comfort to the frightened.

But the spandrelists counter that saying these beliefs are consolation does not mean they offered an adaptive advantage to our ancestors. "The human mind does not produce adequate comforting delusions against all situations of stress or fear," wrote Pascal Boyer, a leading byproduct theorist, in *Religion Explained*, which came out a year before Atran's book. "Indeed, any organism that was prone to such delusions would not survive long."

Whether or not it is adaptive, belief in the afterlife gains power in two ways: from the intensity with which people wish it to be true and from the confirmation it seems to get from the real world. This brings us back to folkpsychology. We try to make sense of other people partly by imagining what it is like to be them, an adaptive trait that allowed our ancestors to outwit potential enemies. But when we think about being dead, we run into a cognitive wall. How can we possibly think about not thinking? "Try to fill your consciousness with the representation of no-consciousness, and you will see the impossibility of it," the Spanish philosopher Miguel de Unamuno wrote in *Tragic Sense of Life*. "The effort to comprehend it causes the most tormenting dizziness. We cannot conceive of ourselves as not existing."

Much easier, then, to imagine that the thinking somehow continues. This is what young children seem to do, as a study at the Florida Atlantic University demonstrated a few years ago. Jesse Bering and David Bjorklund, the psychologists who conducted the study, used finger puppets to act out the story of a mouse, hungry and lost, who is spotted by an alligator. "Well, it looks like Brown Mouse got eaten by Mr. Alligator," the narrator says at the end. "Brown Mouse is not alive anymore."

Afterward, Bering and Bjorklund asked their subjects, ages 4 to 12, what it meant for Brown Mouse to be "not alive anymore." Is he still hungry? Is he still sleepy? Does he still want to go home? Most said the mouse no longer needed to eat or drink. But a large proportion, especially the younger ones, said that he still had thoughts, still loved his mother and still liked cheese. The children understood what it meant for the

mouse's body to cease to function, but many believed that something about the mouse was still alive.

“Our psychological architecture makes us think in particular ways,” says Bering, now at Queens University in Belfast, Northern Ireland. “In this study, it seems, the reason afterlife beliefs are so prevalent is that underlying them is our inability to simulate our nonexistence.”

It might be just as impossible to simulate the nonexistence of loved ones. A large part of any relationship takes place in our minds, Bering said, so it's natural for it to continue much as before after the other person's death. It is easy to forget that your sister is dead when you reach for the phone to call her, since your relationship was based so much on memory and imagined conversations even when she was alive. In addition, our agent-detection device sometimes confirms the sensation that the dead are still with us. The wind brushes our cheek, a spectral shape somehow looks familiar and our agent detection goes into overdrive. Dreams, too, have a way of confirming belief in the afterlife, with dead relatives appearing in dreams as if from beyond the grave, seeming very much alive.

Belief is our fallback position, according to Bering; it is our reflexive style of thought. “We have a basic psychological capacity that allows anyone to reason about unexpected natural events, to see deeper meaning where there is none,” he says. “It's natural; it's how our minds work.”

Intriguing as the spandrel logic might be, there is another way to think about the evolution of religion: that religion evolved because it offered survival advantages to our distant ancestors. This is where the action is in the science of God debate, with a coterie of adaptationists arguing on behalf of the primary benefits, in terms of survival advantages, of religious belief.

The trick in thinking about adaptation is that even if a trait offers no survival advantage today, it might have had one long ago. This is how Darwinians explain how certain physical characteristics persist even if they do not currently seem adaptive – by asking whether they might have helped our distant ancestors form social groups, feed themselves, find suitable mates or keep from getting killed. A facility for storing calories as fat, for instance, which is a detriment in today's food-rich society, probably helped our ancestors survive cyclical famines.

So trying to explain the adaptiveness of religion means looking for how it might have helped early humans survive and reproduce. As some adaptationists see it, this could have worked on two levels, individual and group. Religion made people feel better, less tormented by thoughts about death, more focused on the future, more willing to take care of themselves. As William James put it, religion filled people with “a new zest which adds itself like a gift to life... an assurance of safety and a temper of peace and, in relation to others, a preponderance of loving affections.”

Such sentiments, some adaptationists say, made the faithful better at finding and storing food, for instance, and helped them attract better mates because of their reputations for morality, obedience and sober living. The advantage might have worked at the group level too, with religious groups outlasting others because they were more cohesive, more likely to contain individuals willing to make sacrifices for the group, and more adept at sharing resources and preparing for warfare.

One of the most vocal adaptationists is David Sloan Wilson, an occasional thorn in the side of both Scott Atran and Richard Dawkins. Wilson, an evolutionary biologist at the State University of New York at Binghamton, focuses much of his argument at the group level. “Organisms are a product of natural selection,” he wrote in *Darwin’s Cathedral: Evolution, Religion, and the Nature of Society*, which came out in 2002, the same year as Atran’s book, and staked out the adaptationist view. “Through countless generations of variation and selection, [organisms] acquire properties that enable them to survive and reproduce in their environments. My purpose is to see if human groups in general, and religious groups in particular, qualify as organismic in this sense.”

Wilson’s father was Sloan Wilson, author of *The Man in the Gray Flannel Suit*, an emblem of mid-’50s suburban anomie that was turned into a film starring Gregory Peck. Sloan Wilson became a celebrity, with young women asking for his autograph, especially after his next novel, *A Summer Place*, became another blockbuster movie. The son grew up wanting to do something to make his famous father proud.

“I knew I couldn’t be a novelist,” said Wilson, who crackled with intensity during a telephone interview, “so I chose something as far as possible from literature – I chose science.” He is disarmingly honest about what motivated him: “I was very ambitious, and I wanted to make a mark.” He chose to study human evolution, he said, in part because he had some of his father’s literary leanings and the field required a novelist’s attention to human motivations, struggles, and alliances – as well as a novelist’s flair for narrative.

Wilson eventually chose to study religion not because religion mattered to him personally – he was raised in a secular Protestant household and says he has long been an atheist – but because it was a lens through which to look at and revivify a branch of evolution that had fallen into disrepute. When Wilson was a graduate student at Michigan State University in the 1970s, Darwinians were critical of group selection, the idea that human groups can function as single organisms the way beehives or anthills do. So he decided to become the man who rescued this discredited idea. “I thought, ‘Wow, defending group selection – now, that would be big’,” he recalled. It wasn’t until the 1990s, he said, that he realized that “religion offered an opportunity to show that group selection was right after all.”

Dawkins once called Wilson’s defense of group selection “sheer, wanton, head-in-bag perversity.” Atran, too, has been dismissive of this approach, calling it “mind blind” for essentially ignoring the role of the brain’s mental machinery. The adaptationists

“cannot in principle distinguish Marxism from monotheism, ideology from religious belief,” Atran wrote. “They cannot explain why people can be more steadfast in their commitment to admittedly counterfactual and counterintuitive beliefs – that Mary is both a mother and a virgin, and God is sentient but bodiless – than to the most politically, economically or scientifically persuasive account of the way things are or should be.”

Still, for all its controversial elements, the narrative Wilson devised about group selection and the evolution of religion is clear, perhaps a legacy of his novelist father. Begin, he says, with an imaginary flock of birds. Some birds serve as sentries, scanning the horizon for predators and calling out warnings. Having a sentry is good for the group but bad for the sentry, which is doubly harmed: by keeping watch, the sentry has less time to gather food, and by issuing a warning call, it is more likely to be spotted by the predator. So in the Darwinian struggle, the birds most likely to pass on their genes are the nonsentries. How, then, could the sentry gene survive for more than a generation or two?

To explain how a self-sacrificing gene can persist, Wilson looks to the level of the group. If there are 10 sentries in one group and none in the other, 3 or 4 of the sentries might be sacrificed. But the flock with sentries will probably outlast the flock that has no early-warning system, so the other 6 or 7 sentries will survive to pass on the genes. In other words, if the whole-group advantage outweighs the cost to any individual bird of being a sentry, then the sentry gene will prevail.

There are costs to any individual of being religious: the time and resources spent on rituals, the psychic energy devoted to following certain injunctions, the pain of some initiation rites. But in terms of intergroup struggle, according to Wilson, the costs can be outweighed by the benefits of being in a cohesive group that out-competes the others.

There is another element here too, unique to humans because it depends on language. A person’s behavior is observed not only by those in his immediate surroundings but also by anyone who can hear about it. There might be clear costs to taking on a role analogous to the sentry bird – a person who stands up to authority, for instance, risks losing his job, going to jail or getting beaten by the police – but in humans, these local costs might be outweighed by long-distance benefits. If a particular selfless trait enhances a person’s reputation, spread through the written and spoken word, it might give him an advantage in many of life’s challenges, like finding a mate. One way that reputation is enhanced is by being ostentatiously religious.

“The study of evolution is largely the study of trade-offs,” Wilson wrote in *Darwin’s Cathedral*. It might seem disadvantageous, in terms of foraging for sustenance and safety, for someone to favor religious over rationalistic explanations that would point to where the food and danger are. But in some circumstances, he wrote, “a symbolic belief system that departs from factual reality fares better.”

For the individual, it might be more adaptive to have “highly sophisticated mental modules for acquiring factual knowledge and for building symbolic belief systems” than to have only one or the other, according to Wilson. For the group, it might be that a mixture of hardheaded realists and symbolically minded visionaries is most adaptive and that “what seems to be an adversarial relationship” between theists and atheists within a community is really a division of cognitive labor that “keeps social groups as a whole on an even keel.”

Even if Wilson is right that religion enhances group fitness, the question remains: Where does God come in? Why is a religious group any different from groups for which a fitness argument is never even offered – a group of fraternity brothers, say, or Yankees fans?

Richard Sosis, an anthropologist with positions at the University of Connecticut and Hebrew University of Jerusalem, has suggested a partial answer. Like many adaptationists, Sosis focuses on the way religion might be adaptive at the individual level. But even adaptations that help an individual survive can sometimes play themselves out through the group. Consider religious rituals.

“Religious and secular rituals can both promote cooperation,” Sosis wrote in *American Scientist* in 2004. But religious rituals “generate greater belief and commitment” because they depend on belief rather than on proof. The rituals are “beyond the possibility of examination,” he wrote, and a commitment to them is therefore emotional rather than logical – a commitment that is, in Sosis’s view, deeper and more long-lasting.

Rituals are a way of signaling a sincere commitment to the religion’s core beliefs, thereby earning loyalty from others in the group. “By donning several layers of clothing and standing out in the midday sun,” Sosis wrote, “ultraorthodox Jewish men are signaling to others: ‘Hey! Look, I’m a haredi [or extremely pious] Jew. If you are also a member of this group, you can trust me because why else would I be dressed like this?’” These ‘signaling’ rituals can grant the individual a sense of belonging and grant the group some freedom from constant and costly monitoring to ensure that their members are loyal and committed. The rituals are harsh enough to weed out the infidels, and both the group and the individual believers benefit.

In 2003, Sosis and Bradley Ruffle of Ben Gurion University in Israel sought an explanation for why Israel’s religious communes did better on average than secular communes in the wake of the economic crash of most of the country’s kibbutzim. They based their study on a standard economic game that measures cooperation. Individuals from religious communes played the game more cooperatively, while those from secular communes tended to be more selfish. It was the men who attended synagogue daily, not the religious women or the less observant men, who showed the biggest differences. To Sosis, this suggested that what mattered most was the frequent public display of devotion. These rituals, he wrote, led to greater

cooperation in the religious communes, which helped them maintain their communal structure during economic hard times.

In 1997, Stephen Jay Gould wrote an essay in *Natural History* that called for a truce between religion and science. “The net of science covers the empirical universe,” he wrote. “The net of religion extends over questions of moral meaning and value.” Gould was emphatic about keeping the domains separate, urging “respectful discourse” and “mutual humility.” He called the demarcation “nonoverlapping magisteria” from the Latin *magister*, meaning ‘canon’.

Richard Dawkins had a history of spirited arguments with Gould, with whom he disagreed about almost everything related to the timing and focus of evolution. But he reserved some of his most venomous words for *nonoverlapping magisteria*. “Gould carried the art of bending over backward to positively supine lengths,” he wrote in *The God Delusion*. “Why shouldn’t we comment on God, as scientists?... A universe with a creative superintendent would be a very different kind of universe from one without. Why is that not a scientific matter?”

The separation, other critics said, left untapped the potential richness of letting one worldview inform the other. “Even if Gould was right that there were two domains, what religion does and what science does,” says Daniel Dennett (who, despite his neo-atheist label, is not as bluntly antireligious as Dawkins and Harris are), “that doesn’t mean science can’t study what religion does. It just means science can’t do what religion does.”

The idea that religion can be studied as a natural phenomenon might seem to require an atheistic philosophy as a starting point. Not necessarily. Even some neo-atheists aren’t entirely opposed to religion. Sam Harris practices Buddhist-inspired meditation. Daniel Dennett holds an annual Christmas sing-along, complete with hymns and carols that are not only harmonically lush but explicitly pious.

And one prominent member of the byproduct camp, Justin Barrett, is an observant Christian who believes in “an all-knowing, all-powerful, perfectly good God who brought the universe into being,” as he wrote in an e-mail message. “I believe that the purpose for people is to love God and love each other.”

At first blush, Barrett’s faith might seem confusing. How does his view of God as a byproduct of our mental architecture coexist with his Christianity? Why doesn’t the byproduct theory turn him into a skeptic? “Christian theology teaches that people were crafted by God to be in a loving relationship with him and other people,” Barrett wrote in his e-mail message. “Why wouldn’t God, then, design us in such a way as to find belief in divinity quite natural?” Having a scientific explanation for mental phenomena does not mean we should stop believing in them, he wrote. “Suppose science produces a convincing account for why I think my wife loves me – should I then stop believing that she does?”

What can be made of atheists, then? If the evolutionary view of religion is true, they have to work hard at being atheists, to resist slipping into intrinsic habits of mind that make it easier to believe than not to believe. Atran says he faces an emotional and intellectual struggle to live without God in a nonatheist world, and he suspects that is where his little superstitions come from, his passing thought about crossing his fingers during turbulence or knocking on wood just in case. It is like an atavistic theism erupting when his guard is down. The comforts and consolations of belief are alluring even to him, he says, and probably will become more so as he gets closer to the end of his life. He fights it because he is a scientist and holds the values of rationalism higher than the values of spiritualism.

This internal push and pull between the spiritual and the rational reflects what used to be called the “God of the gaps” view of religion. The presumption was that as science was able to answer more questions about the natural world, God would be invoked to answer fewer, and religion would eventually recede. Research about the evolution of religion suggests otherwise. No matter how much science can explain, it seems, the real gap that God fills is an emptiness that our big-brained mental architecture interprets as a yearning for the supernatural. The drive to satisfy that yearning, according to both adaptationists and byproduct theorists, might be an inevitable and eternal part of what Atran calls the tragedy of human cognition.

What amazingly competent writers those two women are! And not just for their being able to comprehend so many different and difficult concepts, but for their abilities to convey their understanding to “the rest of us.” But setting aside the accolades, I want to spend the rest of this chapter on suggesting some interpretations of what they’ve written – and omitted.

The general impression I obtain from the two articles quoted above is that religiosity reflects mental malfunctions: God is a series of serious mental errors, errors that are then culturally sanctioned and promoted as religions. Thus, perhaps unsurprisingly (showing that I’ve succumbed to one of the biases that Bacon warned about!), I conclude that religions persist through “indoctrination in ignorance”. Once again, it’s as Mangasarian said:

Religion is the science of children; science is the religion of adults.

More specifically, I was certainly impressed to learn (from Sharon’s article) how much of “religiosity” can be traced to what objective observers would probably agree are “abnormal” brain activities:

- Quieten a person’s “superior parietal lobe” (which normally processes information about space and time) and the person loses ability to distinguish self from non-self

- Abnormal bursts of electrical activity in the temporal lobes (as can occur during an epileptic seizure and can be triggered even by “[anxiety, personal crisis, lack of oxygen, low blood sugar, and simple fatigue](#)”) can lead to a sensed presence of someone else (e.g., God), and
- If the right anterior cingulate (“[which may contain the neural circuits responsible for tagging events as originating from the external world](#)”) is inappropriately switched on, then a person’s thoughts can seem to come from an external voice (such as from a grandchild saying: “[Enough already!](#)”).

Even so, Dear, surely you’re impressed not only with Sharon’s writing ability but also with the progress that science is making. And then, again, there’s the polling result (of who knows what reliability?!) that shows that more than 50% of American adults claim that they’ve experienced “[a sudden religious awakening or insight](#).” From what: too much stress? fatigue? influence from illegal drugs? genetic traits (influencing brain development) derived from so many religious people escaping “religious persecution” in other countries? I sure don’t know.

I was similarly impressed with Robin’s review.⁵ In particular, I was struck by the suggestion that belief in God can be traced not only to malfunctioning activity in the brain (as Sharon reviewed) but also to “[brain architecture that evolved during early human history](#)”.

Actually, though, I wonder if such architecture can be seen also in the brains of many animals, because many of them also display the three features that Robin lists:

1. Agent detection (my German shepherd “Heidi” is very good at that!)
2. Casual reasoning (Heidi certainly seems to know that your grandmother’s getting her bowl will lead to food!), and
3. Although the term “[folkpsychology](#)” seems inappropriate for Heidi, the alternative terms “[intentional stance](#)” or “[social cognition](#)” seem highly appropriate: when Heidi hears me get the keys for my truck (let alone, sees me with my jeans on and getting my jacket, etc.), she starts jumping around, fully aware (“[socially cognizant](#)”) of my intentions to go for a walk!

⁵ Dear: I don’t know her and therefore shouldn’t refer to her by first name, but 1) I wish I did! and 2) in referring to the two authors, it seems appropriate to try to preserve some symmetry!

But apparently, similar “[architecture](#)” in Heidi’s brain (agent detection, causal reasoning, and social cognition) hasn’t led her to conceive of any god – perhaps because her parents never indoctrinated her in the god idea when she was a puppy (☹) or maybe because she doesn’t realize that she’ll die. Thus, As Robin emphasized,

[Fear of death in an undercurrent of belief \[in God\]... According to some adaptationists, this is part of religion’s role, to help humans deal with the grim certainty of death. Believing in God and the afterlife... is how we make sense of the brevity of our time on earth, how we give meaning to this brutish and short existence. Religion can offer solace to the bereaved and comfort to the frightened.](#)

She added:

[Dreams, too, have a way of confirming belief in the afterlife, with dead relatives appearing in dreams as if from beyond the grave, seeming very much alive.](#)

But I must admit to some disappointment in some of the suggestions in Robin’s essay. She stated:

[The trick in thinking about adaptation is that even if a trait offers no survival advantage today, it might have had one long ago. This is how Darwinians explain how certain physical characteristics persist even if they do not currently seem adaptive – by asking whether they might have helped our distant ancestors form social groups, feed themselves, find suitable mates or keep from getting killed...](#)

[So trying to explain the adaptiveness of religion means looking for how it might have helped early humans survive and reproduce. As some adaptationists see it, this could have worked on two levels, individual and group. Religion made people feel better, less tormented by thoughts about death, more focused on the future, more willing to take care of themselves. As William James put it, religion filled people with “a new zest which adds itself like a gift to life... an assurance of safety and a temper of peace and, in relation to others, a preponderance of loving affections.”](#)

[Such sentiments, some adaptationists say, made the faithful better at finding and storing food, for instance, and helped them attract better mates because of their reputations for morality, obedience and sober living. The advantage might have worked at the group level too, with religious groups outlasting others because they were more cohesive, more likely to contain individuals willing to make sacrifices for the group, and more adept at sharing resources and preparing for warfare.](#)

And my complaint with such ideas is different from Atran’s:

[Atran, too, has been dismissive of this approach, calling it “mind blind” for essentially ignoring the role of the brain’s mental machinery. The adaptationists](#)

“cannot in principle distinguish Marxism from monotheism, ideology from religious belief,” Atran wrote. “They cannot explain why people can be more steadfast in their commitment to admittedly counterfactual and counterintuitive beliefs... than to the most politically, economically or scientifically persuasive account of the way things are or should be.”

Instead, my complaint (even with Atran’s) is failure to investigate why, in fact, there’s so little distinction between the adaptationists’ view of religion and of ideologies such as Marxism! That is, I think inadequate attention has been given to what I expect you’d expect I’d conclude, namely, addressing the question: **What’s the objective?**

Well, Dear, rest assured that I’ll address that question. In fact, I’ll spend the entirety of the next chapter addressing it. But in this chapter, I want to introduce the subject of “objectives” by focusing on the goals of both religious people and their leaders. To begin, let me list some “truisms” with which I expect you’ll agree.

- In pursuit of a common objective, people will accomplish more (e.g., building pyramids, setting up a new community, invading other groups) if the people are organized than if they aren’t.
- To pursue a common goal, e.g., to “pick up stakes” and move to Palestine (or to Utah), to expand their empire, whatever, it’s necessary that the people be convinced that it’s in their interest to do so, even if their only “interest” is in not being ostracized (or worse) for not agreeing with the group, e.g., become a Christian (or a Muslim) or be killed.
- Religious leaders (e.g., Ezra, “Saint” Paul, “Saint” Constantine, Muhammad, Joseph Smith, Brigham Young...) needn’t be the originators of either the religion or defining the group’s goal(s) – in fact, usually, such ideas come from some other individual, but usually it’s most effective if the leader organizes the people to pursue the goal (and it’s usually most effective if the leader does the convincing of the people to pursue the goal).

Consequently, in so far as religions organize people to pursue some goal (or goals), religions have the potential to promote a group’s welfare – provided, of course, that the goal isn’t “crazy” (e.g., mass suicide).

That there can be advantages of being affiliated with some religious organizations seems clear. For example, in his 1990 book *The Right Brain and Religion*, C.W. Dalton describes some of the advantages to individuals gained from being affiliated with some “mainstream” religion:

Pragmatists are correct in observing that people fare better in any society by accepting the society's religion, mores, values; by conforming rather than by dissenting. People living in a religious community find that they fit in better, adjust more easily, prosper better, feel more secure and are happier if they accept the prevailing religion.

People like the authority figures and moral absolutes of religion to guide them so they can know the right path to trod in a very confusing world. They like to feel that they are walking on the solid rock of infallible religion rather than on the shifting sands of tentative science and moral relativity. People also like the warm, loving acceptance by religious groups, and emotional fulfillment that gives them a closer feeling to God and their church. And mysticism just by itself seems to fulfill a deep, primitive emotional need for most humans.

The average person in fulfilling his need to believe, in yielding to the urge of his herd instinct and in reaping the many advantages religion offers is following the path of the least resistance and greatest reward.

Another benefit of religion is the raising of one's self-esteem – the feeling that one is superior to soulless lower animals as well as superior to nonbelievers because one is saved and chosen for eternity.

Thereby, there seem to be many advantages available to individuals from being affiliated with some mainstream religion.

In particular, overcoming the fear of death certainly seems attractive to many people. And for people insufficiently fearful of their own death, then the "holy books" of most religions promote additional fear. As example, consider the following threats in the "holy books" of the indicated religions.

Judaism (*Exodus 15, 26*):

If only you will obey the Lord your God, if you will do what is right in his eyes, if you will listen to his commands and keep all his statutes, then I [God] will never bring upon you any of the sufferings which I brought on the Egyptians...

Christianity (*Luke 12, 4*):

Do not fear those who kill the body and after that have nothing more they can do. I [Jesus] will warn you whom to fear: fear him who, after he has killed [Jesus kills?!], has authority to cast [you] into hell. Believe me, he is the one to fear.

Islam (*Quran 4, 56*):

(As for) those who disbelieve in Our communications [to Muhammad], We [Allah] shall make them enter fire; so oft as their skins are thoroughly burned, We will change them for other skins, that they may taste the chastisement...

I suspect, however, that most people (except perhaps for children and some fearful adults) consider such threats to be mainly directed against other people – since most religious people (polling data show) consider themselves to be “the good guys”, heading for eternal bliss in heaven. In one way or another, therefore, most religious people seem happy with their religions: they “think” that they’re making progress toward their (imagined) goal of eternal bliss in paradise (or, in the case of some religious Jews, for “the chosen people” to prosper). Their “thinking”, however, is fallacious.

In earlier chapters (e.g., in the **I**-chapters and in the “excursions” **Ix** and **Qx**), I tried to show you some of the fallacies in religious reasoning. I’ve also tried to show you some evidence that all religions are clearly invented balderdash, and I’ll show you more in later chapters (especially in **Yx**, dealing with “Your Indoctrination in the Mountainous God Lie”); in this chapter, therefore, I don’t plan to provide you with much more such evidence. Yet, I want to spend a little more time addressing “Religious Reasoning”, because given the fact that religions persist in spite of their being clearly invented balderdash, it seems obvious not only that religious people are making serious errors but also that either 1) they don’t realize their errors or 2) they realize their errors and don’t care about them – which itself is sufficiently curious to stimulate examination.

In fact (and amazingly), many religious people are proud of abandoning reason – and to top that off, they use reason to “justify” their abandonment of reason! As an example, consider the following famous (notorious!) statement by the Christian “father” Tertullian (c. 160 – c. 240):

Unhappy Aristotle! who invented for these men dialectics, the art of building up and pulling down; an art so evasive in its propositions, so far-fetched in its conjectures, so harsh in its arguments, so productive of contentions – embarrassing even to itself, retracting everything, and really treating of nothing! Whence spring those “fables and endless genealogies”, and “unprofitable questions”, and “words which spread like a cancer”?

From all these, when the apostle [Paul] would restrain us, he expressly names philosophy as that which he would have us be on our guard against. Writing to the Colossians, he says, “See that no one beguile you through philosophy and vain deceit, after the tradition of men, and contrary to the wisdom of the Holy Ghost.” He had been at Athens, and had in his interviews (with its philosophers) become acquainted with that human wisdom which pretends to know the truth, whilst it only corrupts it,

and is itself divided into its own manifold heresies, by the variety of its mutually repugnant sects.

What indeed has Athens to do with Jerusalem? What concord is there between the Academy and the Church? What between heretics and Christians? Our instruction comes from “the porch of Solomon”, who had himself taught that “**the Lord should be sought in simplicity of heart.**” Away with all attempts to produce a mottled Christianity of Stoic, Platonic, and dialectic composition! We want no curious disputation after possessing Christ Jesus, no inquisition after enjoying the gospel! With our faith, we desire no further belief. For this is our palmary faith, that there is nothing which we ought to believe besides.

Thereby, Tertullian’s reasoning that led him to reject reasoning (☹) is that ‘faith’ is better than ‘reason’. His argument would have been more honest (but just as dumb) if he had written: “**Reason is red and faith is blue – and blue’s a better color!**”

Similar idiocy was promoted by Martin Luther (1483–1546), the founder of all the Protestant religions (including Mormonism), by his “protesting” against the pope’s power. Luther stated:

Reason is the greatest enemy that faith has: it never comes to the aid of spiritual things, but – more frequently than not – struggles against the divine Word, treating with contempt all that emanates from God.

And I would agree with Luther that reason is indeed a great enemy of faith, but not “the greatest enemy”; I’d reserve that privileged distinction for data.

Yet reason, alone, can be used to reject many religious statements. As a silly little example, there’s the idiotic line in the Mormon’s *Articles of Faith* (which my poor grandchildren were forced to memorize!): “**We believe the Bible to be the word of God as far as it is translated correctly.**” Stated differently, the statement is: “**We believe that the Bible is true except for those parts that are mistranslated and are therefore false.**” Duhhhh.

Such a statement contains no information: most people already assumed that Biblical statements are either true or false. But which are which?!

Such stupidity is similar to the famous “liar’s paradox”, in which a person states: “**I always lie.**” If that’s true, then he’s telling a lie, but if he’s telling a lie, then it’s not true – or if he’s again lying, then he’s telling the truth – but then...

The resolution of such silliness (similar, to the Mormon nonsense about the Bible being true except for what's false) is that the liar's statement contains no information. That is, in Aristotelian logic it's assumed that any statement is either true or false. Meanwhile, the liar's claim can be restated as: “**This statement is false.**” If he had said: “**The statement that the sky is blue is false**”, then he made a statement (i.e., that the sky is blue), which may be either true or false. But his claim “**This statement is false**”, isn't a statement!

That is, his claim contains no information. If he had said, “**In the past I always lied**”, then that statement contains information, or if he had said, “**In the future, I'll always lie**”, then again he would have conveyed some information, but his statement “**I always lie**” or “**This statement is a lie**”, contains no information.

Similar silliness, relevant to all religions, is derived from reasoning that deals with empty sets. The classic example deals with the king of the United States. I trust you agree, Dear, that the U.S. king is not shorter than 6 feet tall; therefore, surely you agree that the U.S. king is at least 6 feet tall – save, of course, if you have no interest in talking about empty sets (i.e., there is not U.S. king)!

In the case of all religions, such silliness is contained in all the “superlatives” used to describe God, namely, omnipotent (all powerful), omniscient (all knowing), omnibeneficent (all good), omnipresent (in all places), omnifarious (in all ways), and so on. Having thereby put God at infinity, religious people must abandon reason, because such “superlatives” lead to paradoxes, such as the following:⁶

- If God is all-powerful, then he couldn't possibly want anything (since having a ‘want’, i.e., an unsatisfied desire, shows lack of power to satisfy desires); therefore, God couldn't possibly want anything from mere people, such as adulation, living our lives according to clerical rules, etc.
- In particular, God couldn't have created the universe, because he would have needed a reason to do so; that is, he'd have had some “want” – some unfulfilled desire. But again, having a want is incompatible with omnipotence.

⁶ These “paradoxes” (and more) are well summarized by, for example, an unspecified author at <http://website.lineone.net/~kwelos/thealogy.htm>.

- If God is all good (omnibeneficent), then why is there so much evil in the world? And the evil can't be attributed to Satan, since it's claimed that God is omnipotent (and therefore can control Satan) and that God is omniscient (and therefore knows what Satan plans to do).
- If God is everywhere (omnipresent) and involved in everything (omnifarious), then he has been involved in tortures, murders, and so on – and who wants anything to do with such a hideous god?
- In particular, if God is everywhere (omnipresent) and involved in everything (omnifarious), then he must be in Hell busily involved in torturing people for eternity.
- If God is all knowing, then people couldn't possibly have "free will", since if God knows what we're going to do, then what we do isn't by our choice; in fact, we then have no choice in the matter: we must do what he knows we'll do, for otherwise, he wouldn't be omniscient.
- Consequently, it's not only silly but even hideous that God would punish us for any "sin", since the test was rigged: even before we were born, God already knew exactly what we'd do – he even planned it! In particular, obviously God created me knowing full well that I'd never believe in him – I guess so he'd have the fun of torturing me for eternity in Hell.
- And God couldn't change his mind about sending me to Hell, because being omniscient, he would already know that he'd change his mind – so then, he wouldn't be changing his mind. Thus, God is powerless to change his mind; therefore, omniscience is incompatible with omnipotence.

Of course the resolution of such paradoxes is obvious to people who can still claim to possess some reasoning abilities: since paradoxes can't exist, then neither can God! That is, in the case of God (just as in the case of the U.S. king), we're again dealing with an empty set. But instead of choosing such an obvious resolution, religious people chose to abandon (or to ignore) reason, itself. In his 1990 book *Quantum Psychology*, Robert Wilson well summarized such idiocy:

People have murdered each other, in massive wars and guerilla actions, for many centuries, and still murder each other in the present, over Ideologies and Religions which, stated as propositions, appear neither true nor false to modern logicians – meaningless propositions that look meaningful to the linguistically naive.

Yet (and as I've written before, e.g., in **R**, dealing with Reason), certainly I'm not opposed to rejecting reasoned results, since it's so exceedingly easy to make mistakes in reasoning.

Again, reasoning is like walking a greased tightrope stretched between two tall buildings – with no safety net below. Therefore, sensible people demand that the only safety net found to be valuable (i.e., the scientific method) always be firmly in place. That is, Dear, always demand that reasoned results provide predictions – and then continue testing those predictions against data until you're convinced that your reasoned result is reliable.

For example, suppose you hear the claim (as you have) that God created the universe. Then please ask yourself: “So what?” That is, what are the predictions of such a postulate? Since God made the universe, therefore the universe must ____ . I dare you to try to fill in that blank, Dear, both with something that can be tested and that's different from what would be the case if the universe created itself!

And of course I agree with the prediction that, if God created the universe, then the clerics' collection plates will be kept full, but have you considered the possibility that their collection plates are full because... That is, Dear, when seeking explanations, it's wise to look, first, for the simplest.

Also, Dear, experience has shown that it's unwise to treat such matters lightly. In particular, as I'll be showing you, your father's failure to test the predictions of his reasoned result is why you were indoctrinated in Mormonism. Hundreds of millions of people (if not billions!) have similarly failed to test their reasoned results. In fact, the Bible even contains injunctions against testing results, such as its horrible line (e.g., at *Luke 4, 12*): “**Do not put the Lord your God to the test.**” That's gotta be one of the most ignorant (and therefore most evil) statements made in the history of the world!

In contrast, if people propose to reject reason for faith, then surely to even their damnable god, a sensible step is to test the predictions of 'faith'. For example, Jesus reportedly stated that faith can move mountains. Do you know of any confirmation of that prediction? He also reportedly stated that you could safely drink poison in his name. Anyone care to try that prediction? And since most people answer “No!” to such questions, then “reasonable” people will go back to the premiss that reason should be abandoned for faith and conclude something similar to: “**Hey, wait a minute; that's dumb.**”

For now, I'll summarize by quoting from a great essay by Anton Thorn.⁷

God and Omniscience

Commentary by Anton Thorn

Conclusion. In many ways, the mystic's notion of omniscience is fundamentally flawed. In addition to the many problems associated with this notion that other critics of religion have pointed out, the notion of omniscience attempts to posit knowledge without method as well as knowledge devoid of any purpose whatsoever. As such, the notion omniscience represents the mystic's desire for the unearned as well as his wish to escape the constraining facts of reality.

Quite simply, since the notion of omniscience has nothing to do with the concept knowledge *in any rational sense*, the mystic must find a term other than *knowledge* as any part of the definition of omniscience. Since all legitimate knowledge known to man is the product of rational effort, there is no such thing as automatic knowledge, or knowledge without method. This is precisely what the mystic is attempting to posit as an attribute of his alleged deity, yet such a notion has no correspondence whatsoever to the facts of reality. Therefore, the notion 'omniscience' does not qualify as a legitimate concept. Indeed, it stands as an anti-concept asserted to substitute and obliterate genuinely rational concepts for knowledge.

We recognize, given the fact that exhaustive knowledge of the universe could suit no purpose of any immortal being which can know no threat or loss, that the real purpose for ascribing the notion omniscience to a deity lies in the hands of the priests who originate the ascription in the first place. As a tool to bolster church authority through positing a voyeuristic God capable of 'seeing' every act and thought of the believer, the priests and theologians have formulated the ultimate device for the psychological invasion of privacy.

We also see, by the Bible's own repeated admissions, that fear is to be considered a virtue according to this worldview, that men indeed are commanded to have fear, that this fear holds moral primacy over all other emotions one can expect to experience in life. How apologists today can argue that the Christian worldview, a worldview built on the fear of threats, is the only worldview that can account for reason, morality, and science (!) is a genuine distortion of the crudest sort.

As The French writer Stendhal (1783–1842) wrote:

All religions are founded on the fear of the many and the cleverness of the few.

⁷ Copied from <http://www.geocities.com/Athens/Sparta/1019/Omniscience.htm>.

The above analysis of fallacious reasoning in personal goals adopted by religious people, however, fails to address the issue raised a few pages ago, namely, the similarities between religious groups and any ideological group (such as the Nazis or the Communists), the topic to which I now want to turn.

In my opinion, similarities (between religions and other ideologies) occur because (for reasons that I'll try to show you in the next chapter), throughout history, most groups of people didn't have some over-riding, imperative goal (either religious or political) that they pursued. But exceptions occurred for those groups that were successful (at least for a time). Thereby, I'm suggesting that a widely accepted personal goal (e.g., avoid death) generally isn't enough to keep a religion (or any ideology) going; for any religion to survive, a group goal is needed.

To illustrate (although I won't show you details of the historical setting until the "excursion" Yx), consider the following examples.

- Judaism: The original goal (specified by Ezra et al. in the Old Testament) was to leave Babylon and return to Israel (a goal for which Ezra et al. concocted the story of Moses leading the Israelites out of Egypt – quite likely a story essentially totally fabricated for its moral, namely, "Obey!"); subsequent group-goals specified by the Jewish clerics were to survive in spite of invasion by Greeks and then Romans, and then in spite of the treatment of Jews by Christians (including Hitler).
- Christianity: After "Saint Paul" accomplished his goal of establishing Christian Churches, the Roman Emperor Constantine gave Christianity the political support it needed to prosper, by specifying the group goal of destroying all competing religions (a goal chosen by Constantine, so he could consolidate his power, by destroying his competition); group goals set by subsequent Christian clerics were designed, first for the Catholics, so they (led by the popes) could extend and maintain their powers throughout Europe, and then later, for the "reformists" to set up their own power structures, free of the pope.
- Islam: After Muhammad accomplished his personal goal of uniting the Arabs into a cohesive, monotheistic group, later Islamic political and clerical leaders chose the group goal for the Muslims of conquering the known world – so they (the politicians and clerics) could gain still more power and wealth.
- Mormonism: After Sidney Rigdon accomplished his personal goal of starting his own religion and Joseph Smith accomplished his personal goal of gaining economic security for himself and his family, Brigham Young (out of desperation, when the Mormon group was disintegrating) set the group goal of establishing a "new Zion" in Utah.

Consequently, to address the question “Why religions have persisted” (in spite of their being clearly invented balderdash), I think more study is needed of an amazing dynamic between personal and group goals. Although I haven’t devoted significant study to this “dynamic” (nor do I ever intend to!), nonetheless, the following glimpse of an outline seems obvious.

- First, some mystic (or schizophrenic or lunatic or...), such as Zarathustra, Ezra, Jesus, “Saint” Paul, Muhammad, Sidney Rigdon, Karl Marx, Mussolini, Hitler, concocts a scheme in which individuals can conclude they could prosper (being led to “a land of milk and honey”, gaining eternal life in paradise, pillaging others, moving to America, dividing up the wealth of the “bourgeois”, regaining the historical glory of their civilization, being recognized as a member of a “superior race”, whatever).
- Then, having bought into this concocted goal, the people are vulnerable to accept whatever the religious or political leaders specify to be the condition for the people reaching that goal. Thereby, a Cyrus the Great could get a guaranteed annual tribute from the Israelites, Constantine could gain a firm grip on the Roman Empire, the chief Muslim civil and religious ruler (the Caliph) could proceed to expand the Islamic Empire, the popes could continue their conquest of Europe and then challenge the Islamic Empire, members of “the royalty” of Northern Europe could break free from control by the Catholic Church, Joseph Smith and Brigham Young could build their little empires, and Mussolini, Hitler, Stalin, and Mao could build their much bigger empires.

That is, Ezra et al., “Saint” Paul, Constantine, a succession of popes, Muhammad and subsequent caliphs, princes and kings who backed Martin Luther (for their own advantages), Joseph Smith and Brigham Young, Mussolini, Hitler, Stalin, Mao, the industrialists behind the Japanese emperor... saw how to use religion and other ideologies to manipulate people, so such leaders could pursue their own megalomaniacal ambitions. Thus, similar to any ideology, it appears that organized religions persist (in spite of their being clearly invented balderdash) because megalomaniacs use them to manipulate the people.

You might think (or maybe better, “hope”), “Surely it couldn’t be so!” But, Dear, let me sketch (in the following list) a few more details to illustrate not only the blatant illogic at the foundation of all the Abrahamic religions but also how leaders used these religions (in spite of their illogic) to manipulate the people. In each case, the leaders promised the people various “goodies” if only the people would follow the person promising to pass out the goodies.

Judaism: The “story line” that Ezra and co-authors of the Old Testament concocted was that, if only the Israelites would obey the clerics, they’d lead the people to prosperity in a “land of milk and honey” in Palestine. But in the same story, the authors describe Palestine as a place with droughts (which is the reason that they allege that Abraham and later Israel and his sons left the place for Egypt) and it was filled with people who would need to be slaughtered before the Israelites could take possession of the land. Upon hearing the story for the first time (while the Israelites were in Babylon), surely a rationalist would have said something similar to:

Hey, now, wait a minute, Ezra, your plan doesn’t make sense. As you just told us in your story, we’ve been there, done that, and only a fool would choose to do it again. The place is nothing but a damn desert. I say that we otta move north, to where there’s more water – you know, up closer to what you guys call Eden, near the headwaters of the Tigers and Euphrates. Maybe it ain’t no land of milk and honey, but I’ve heard that there’s good pasture up there, plenty of water, and lots of apple trees.

Christianity (or more accurately, Paulism): The “story line” concocted by “Saint” Paul is that, if only the people would buy into his wild scheme, then although they might not get a land of milk and honey in this life, their lives would be teeming with goodies after they die. His scheme was contained in the following claims: 1) that the greatest good is to live forever with God (which would be granted to everyone who “believes” the rest of the story), 2) that unlike the rest of us, Jesus knew that, upon his death, he would join God, and 3) that Jesus “sacrificed” his life for us (as “atonement” for our “original sin”). But those three assumptions are logically inconsistent, because to make a sacrifice to help someone, then by definition of ‘sacrifice’, it’s necessary to give up “a good” for something less desirable. In contrast, if “the greatest good” is to live forever with God and if Jesus was certain that upon his death he would join God, then Jesus actually gave up his life to get something better, which isn’t a sacrifice – it’s a good personal (and business) practice! Further, when later clerics (in some branches of Paulism, including Mormonism) weakened Paul’s claim and assumed that Jesus only suffered on the cross for us (as an “atonement” for our “original sin”), then again it doesn’t make sense. I can imagine a skeptic in the back row saying something similar to:

Hey, now, there, wait a minute! You claim that Jesus had magical powers to cure infirmities, remedy illnesses, and generally relieve pain – not to dwell on all the stuff about turning water into wine, stopping the wind, and bringing dead people back to life. With such powers, didn’t he have the power that even some modern mystics have of ignoring his own pain? I mean, being nailed to a cross seems small potatoes compared to walking on burning coals. So tell me again: exactly how much ‘suffering’ did he endure – and how come?

Islam (concocted by who knows which clerics fabricated the Quran): The “story line” of Islamic silliness is similar: if only the people would obey the clerics, then the people would get not only all the goodies in the Christian paradise but even more –

including for all the sex-starved, young, potential warriors (“sex starved”, because the rich old-fogies, the polygamists, bought up so many wives, leaving few women for the young men) 72 virgins per warrior, guaranteed if the warriors were killed in battle. No wonder the testosterone-laden young men went charging into battle, but it’s astounding that more of them didn’t say, as did Omar Khayyam:⁸

And do you think that unto such as you
A maggot-minded, starved, fanatic crew
God gave a secret, and denied it me?
Well, well – what matters it? Believe that too!

In all such case, it does seem correct that group goals helped the group prosper (not uncommonly at the expense of other groups), e.g., the Egyptian Pharaoh’s scheme of taxing the farmers to build the pyramids, Cyrus the Great’s goal to send the Jews back to Israel and then to tax them, Constantine’s goal of gaining control of the fracturing Roman Empire, the Muslim goal of invading other countries, and so on, out to an including Nazism and Communism. But meanwhile, my revulsion of such schemes is not simply that the personal goals adopted by the people (e.g., to live for eternity in paradise) are clearly invented balderdash, but the group goals were not for the benefit of the people but for the benefit of the leaders. Thus, not only are all organized religions clearly invented balderdash, but more significantly, they were promoted by “politicians” for the purpose of gaining and maintaining control over the people. All of which was amazingly well summarized in the statement:⁹

Religion is regarded by the common people as true, by the wise as false, and by the rulers as useful.

And most significantly (in particular for you) is that, today, such goals – both personal (e.g., “**go forth and multiply**”) and public (e.g., prepare for some Messiah’s appearance, establish some worldwide theocracy, or similar idiocy) – aren’t sensible goals for modern humans – for reasons that I’ll try to explain in the next chapter, which amazingly enough will be waiting for you after you get some exercise.

⁸ Dear: Recall that Omar Khayyam was a Persian astronomer, mathematician, poet, and philosopher who lived from 1048–1131. I copied this translation of a stanza (or “rubai”) of his *The Rubaiyat* (this translation by Righard Le Gallienne) from Christopher Hitchens’ 2007 book *god is not Great – How Religion Poisons Everything*.

⁹ This statement is frequently frequently attributed to the Roman philosopher Seneca the Younger (5 BCE – 65 CE), but as I mentioned in another chapter, it actually seems to be an adaptation of something written by Edward Gibbon in his multivolume *The History of the Decline and Fall of the Roman Empire*.