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Is God an Accident?

DESPITE THE VAST NUMBER OF RELIGIONS, NEARLY EVERYONE IN THE WORLD BELIEVES IN THE SAME THINGS: THE EXISTENCE OF A SOUL, AN AFTERLIFE, MIRACLES, AND THE DIVINE CREATION OF THE UNIVERSE. RECENTLY PSYCHOLOGISTS DOING RESEARCH ON THE MINDS OF INFANTS HAVE DISCOVERED TWO RELATED FACTS THAT MAY ACCOUNT FOR THIS PHENOMENON. ONE: HUMAN BEINGS COME INTO THE WORLD WITH A PREDISPOSITION TO BELIEVE IN SUPERNATURAL PHENOMENA. AND TWO: THIS PREDISPOSITION IS AN INCIDENTAL BY-PRODUCT OF COGNITIVE FUNCTIONING GONE AWRY. WHICH LEADS TO THE QUESTION ...

By Paul Bloom

From *Atlantic Unbound*:

[Interviews: "Wired for Creationism?"](#)

Paul Bloom on mysticism, fundamentalism, and the elusive nature of art.

I. God Is Not Dead

When I was a teenager my rabbi believed that the Lubavitcher Rebbe, who was living in Crown Heights, Brooklyn, was the Messiah, and that the world was soon to end. He believed that the earth was a few thousand years old, and that the fossil record was a consequence of the Great Flood. He could describe the afterlife, and was able to answer adolescent questions about the fate of Hitler's soul.

My rabbi was no crackpot; he was an intelligent and amiable man, a teacher and a scholar. But he held views that struck me as strange, even disturbing. Like many secular people, I am comfortable with religion as a source of spirituality and transcendence, tolerance and love, charity and good works. Who can object to the faith of Martin Luther King Jr. or the Dalai Lama—at least as long as that faith grounds moral positions one already accepts? I am uncomfortable, however, with religion when it makes claims about the natural world, let alone a world beyond nature. It is easy for those of us who reject supernatural beliefs to agree with Stephen Jay Gould that the best way to accord dignity and respect to both science and religion is to recognize that they apply to "non-overlapping magisteria": science gets the realm of facts, religion the realm of values.

For better or worse, though, religion is much more than a set of ethical principles or a vague sense of transcendence. The anthropologist Edward Tylor got it right in 1871, when he noted that the

"minimum definition of religion" is a belief in spiritual beings, in the supernatural. My rabbi's specific claims were a minority view in the culture in which I was raised, but those *sorts* of views—about the creation of the universe, the end of the world, the fates of souls—define religion as billions of people understand and practice it.

The United States is a poster child for supernatural belief. Just about everyone in this country—96 percent in one poll—believes in God. Well over half of Americans believe in miracles, the devil, and angels. Most believe in an afterlife—and not just in the mushy sense that we will live on in the memories of other people, or in our good deeds; when asked for details, most Americans say they believe that after death they will actually reunite with relatives and get to meet God. Woody Allen once said, "I don't want to achieve immortality through my work. I want to achieve it through not dying." Most Americans have precisely this expectation.

But America is an anomaly, isn't it? These statistics are sometimes taken as yet another indication of how much this country differs from, for instance, France and Germany, where secularism holds greater sway. Americans are fundamentalists, the claim goes, isolated from the intellectual progress made by the rest of the world.

There are two things wrong with this conclusion. First, even if a gap between America and Europe exists, it is not the United States that is idiosyncratic. After all, the rest of the world—Asia, Africa, the Middle East—is not exactly filled with hard-core atheists. If one is to talk about exceptionalism, it applies to Europe, not the United States.

Second, the religious divide between Americans and Europeans may be smaller than we think. The sociologists Rodney Stark, of Baylor University, and Roger Finke, of Pennsylvania State University, write that the big difference has to do with church attendance, which really is much lower in Europe. (Building on the work of the Chicago-based sociologist and priest Andrew Greeley, they argue that this is because the United States has a rigorously free religious market, in which churches actively vie for parishioners and constantly improve their product, whereas European churches are often under state control and, like many government monopolies, have become inefficient.) Most polls from European countries show that a majority of their people are believers. Consider Iceland. To judge by rates of churchgoing, Iceland is the most secular country on earth, with a pathetic two percent weekly attendance. But four out of five Icelanders say that they pray, and the same proportion believe in life after death.

In the United States some liberal scholars posit a different sort of exceptionalism, arguing that belief in the supernatural is found mostly in Christian conservatives—those infamously described by the *Washington Post* reporter Michael Weisskopf in 1993 as "largely poor, uneducated, and easy to command." Many people saw the 2004 presidential election as pitting Americans who are religious against those who are not.

An article by Steven Waldman in the online magazine *Slate* provides some perspective on the divide:

"As you may already know, one of America's two political parties is extremely religious. Sixty-one percent of this party's voters say they pray daily or more often. An astounding 92 percent of them believe in life after death. And there's a hard-core subgroup in this party of super-religious Christian zealots. Very conservative on gay marriage, half of the members of this

subgroup believe Bush uses too *little* religious rhetoric, and 51 percent of them believe God gave Israel to the Jews and that its existence fulfills the prophecy about the second coming of Jesus."

The group that Waldman is talking about is Democrats; the hard-core subgroup is African-American Democrats.

Finally, consider scientists. They are less likely than non-scientists to be religious—but not by a huge amount. A 1996 poll asked scientists whether they believed in God, and the pollsters set the bar high—no mealy-mouthed evasions such as "I believe in the totality of all that exists" or "in what is beautiful and unknown"; rather, they insisted on a real biblical God, one believers could pray to and actually get an answer from. About 40 percent of scientists said yes to a belief in this kind of God—about the same percentage found in a similar poll in 1916. Only when we look at the most elite scientists—members of the National Academy of Sciences—do we find a strong majority of atheists and agnostics.

These facts are an embarrassment for those who see supernatural beliefs as a cultural anachronism, soon to be eroded by scientific discoveries and the spread of cosmopolitan values. They require a new theory of why we are religious—one that draws on research in evolutionary biology, cognitive neuroscience, and developmental psychology.

II. Opiates and Fraternities

One traditional approach to the origin of religious belief begins with the observation that it is difficult to be a person. There is evil all around; everyone we love will die; and soon we ourselves will die—either slowly and probably unpleasantly or quickly and probably unpleasantly. For all but a pampered and lucky few life really is nasty, brutish, and short. And if our lives have some greater meaning, it is hardly obvious.

So perhaps, as Marx suggested, we have adopted religion as an opiate, to soothe the pain of existence. As the philosopher Susanne K. Langer has put it, man "cannot deal with Chaos"; supernatural beliefs solve the problem of this chaos by providing meaning. We are not mere things; we are lovingly crafted by God, and serve his purposes. Religion tells us that this is a just world, in which the good will be rewarded and the evil punished. Most of all, it addresses our fear of death. Freud summed it all up by describing a "three-fold task" for religious beliefs: "they must exorcise the terrors of nature, they must reconcile men to the cruelty of Fate, particularly as it is shown in death, and they must compensate them for the sufferings and privations which a civilized life in common has imposed on them."

Religions can sometimes do all these things, and it would be unrealistic to deny that this partly explains their existence. Indeed, sometimes theologians use the foregoing arguments to make a case for why we should believe: if one wishes for purpose, meaning, and eternal life, there is nowhere to go but toward God.

One problem with this view is that, as the cognitive scientist Steven Pinker reminds us, we don't typically get solace from propositions that we don't already believe to be true. Hungry people don't cheer themselves up by believing that they just had a large meal. Heaven is a reassuring notion only insofar as people believe such a place exists; it is this belief that an adequate theory of religion has to explain in the first place.

Also, the religion-as-opiate theory fits best with the monotheistic religions most familiar to us. But what about those people (many of the religious people in the world) who do not believe in an all-wise and just God? Every society believes in spiritual beings, but they are often stupid or malevolent. Many religions simply don't deal with metaphysical or teleological questions; gods and ancestor spirits are called upon only to help cope with such mundane problems as how to prepare food and what to do with a corpse—not to elucidate the Meaning of It All. As for the reassurance of heaven, justice, or salvation, again, it exists in some religions but by no means all. (In fact, even those religions we are most familiar with are not always reassuring. I know some older Christians who were made miserable as children by worries about eternal damnation; the prospect of oblivion would have been far preferable.) So the opiate theory is ultimately an unsatisfying explanation for the existence of religion.

The major alternative theory is social: religion brings people together, giving them an edge over those who lack this social glue. Sometimes this argument is presented in cultural terms, and sometimes it is seen from an evolutionary perspective: survival of the fittest working at the level not of the gene or the individual but of the social group. In either case the claim is that religion thrives because groups that have it outgrow and outlast those that do not.

In this conception religion is a fraternity, and the analogy runs deep. Just as fraternities used to paddle freshmen on the rear end to instill loyalty and commitment, religions have painful initiation rites—for example, snipping off part of the penis. Also, certain puzzling features of many religions, such as dietary restrictions and distinctive dress, make perfect sense once they are viewed as tools to ensure group solidarity.

The fraternity theory also explains why religions are so harsh toward those who do not share the faith, reserving particular ire for apostates. This is clear in the Old Testament, in which "a jealous God" issues commands such as:

"Should your brother, your mother's son, or your son or your daughter or the wife of your bosom or your companion who is like your own self incite you in secret, saying Let us go and worship other gods' ... you shall surely kill him. Your hand shall be against him first to put him to death and the hand of all the people last. And you shall stone him and he shall die, for he sought to thrust you away from the LORD your God who brought you out of the land of Egypt, from the house of slaves. —Deuteronomy 13, 7:11

This theory explains almost everything about religion—except the religious part. It is clear that rituals and sacrifices can bring people together, and it may well be that a group that does such things has an advantage over one that does not. But it is not clear why a *religion* has to be involved. Why are gods, souls, an afterlife, miracles, divine creation of the universe, and so on brought in? The theory doesn't explain what we are most interested in, which is belief in the supernatural.

III. Bodies and Souls

Enthusiasm is building among scientists for a quite different view—that religion emerged not to serve a purpose but by accident.

This is not a value judgment. Many of the good things in life are, from an evolutionary perspective, accidents. People sometimes give money, time, and even blood to help unknown strangers in faraway

countries whom they will never see. From the perspective of one's genes this is disastrous—the suicidal squandering of resources for no benefit. But its origin is not magical; long-distance altruism is most likely a by-product of other, more adaptive traits, such as empathy and abstract reasoning. Similarly, there is no reproductive advantage to the pleasure we get from paintings or movies. It just so happens that our eyes and brains, which evolved to react to three-dimensional objects in the real world, can respond to two-dimensional projections on a canvas or a screen.

Supernatural beliefs might be explained in a similar way. This is the religion-as-accident theory that emerges from my work and the work of cognitive scientists such as Scott Atran, Pascal Boyer, Justin Barrett, and Deborah Kelemen. One version of this theory begins with the notion that a distinction between the physical and the psychological is fundamental to human thought. Purely physical things, such as rocks and trees, are subject to the pitiless laws of Newton. Throw a rock, and it will fly through space on a certain path; if you put a branch on the ground, it will not disappear, scamper away, or fly into space. Psychological things, such as people, possess minds, intentions, beliefs, goals, and desires. They move unexpectedly, according to volition and whim; they can chase or run away. There is a moral difference as well: a rock cannot be evil or kind; a person can.

Where does the distinction between the physical and the psychological come from? Is it something we learn through experience, or is it somehow pre-wired into our brains? One way to find out is to study babies. It is notoriously difficult to know what babies are thinking, given that they can't speak and have little control over their bodies. (They are harder to test than rats or pigeons, because they cannot run mazes or peck levers.) But recently investigators have used the technique of showing them different events and recording how long they look at them, exploiting the fact that babies, like the rest of us, tend to look longer at something they find unusual or bizarre.

This has led to a series of striking discoveries. Six-month-olds understand that physical objects obey gravity. If you put an object on a table and then remove the table, and the object just stays there (held by a hidden wire), babies are surprised; they expect the object to fall. They expect objects to be solid, and contrary to what is still being taught in some psychology classes, they understand that objects persist over time even if hidden. (Show a baby an object and then put it behind a screen. Wait a little while and then remove the screen. If the object is gone, the baby is surprised.) Five-month-olds can even do simple math, appreciating that if first one object and then another is placed behind a screen, when the screen drops there should be two objects, not one or three. Other experiments find the same numerical understanding in nonhuman primates, including macaques and tamarins, and in dogs.

Similarly precocious capacities show up in infants' understanding of the social world. Newborns prefer to look at faces over anything else, and the sounds they most like to hear are human voices—preferably their mothers'. They quickly come to recognize different emotions, such as anger, fear, and happiness, and respond appropriately to them. Before they are a year old they can determine the target of an adult's gaze, and can learn by attending to the emotions of others; if a baby is crawling toward an area that might be dangerous and an adult makes a horrified or disgusted face, the baby usually knows enough to stay away.

A skeptic might argue that these social capacities can be explained as a set of primitive responses, but there is some evidence that they reflect a deeper understanding. For instance, when twelve-month-olds see one object chasing another, they seem to understand that it really is chasing, with the

goal of catching; they expect the chaser to continue its pursuit along the most direct path, and are surprised when it does otherwise. In some work I've done with the psychologists Valerie Kuhlmeier, of Queen's University, and Karen Wynn, of Yale, we found that when babies see one character in a movie help an individual and a different character hurt that individual, they later expect the individual to approach the character that helped it and to avoid the one that hurt it.

Understanding of the physical world and understanding of the social world can be seen as akin to two distinct computers in a baby's brain, running separate programs and performing separate tasks. The understandings develop at different rates: the social one emerges somewhat later than the physical one. They evolved at different points in our prehistory; our physical understanding is shared by many species, whereas our social understanding is a relatively recent adaptation, and in some regards might be uniquely human.

That these two systems are distinct is especially apparent in autism, a developmental disorder whose dominant feature is a lack of social understanding. Children with autism typically show impairments in communication (about a third do not speak at all), in imagination (they tend not to engage in imaginative play), and most of all in socialization. They do not seem to enjoy the company of others; they don't hug; they are hard to reach out to. In the most extreme cases children with autism see people as nothing more than objects—objects that move in unpredictable ways and make unexpected noises and are therefore frightening. Their understanding of other minds is impaired, though their understanding of material objects is fully intact.

At this point the religion-as-accident theory says nothing about supernatural beliefs. Babies have two systems that work in a cold-bloodedly rational way to help them anticipate and understand—and, when they get older, to manipulate—physical and social entities. In other words, both these systems are biological adaptations that give human beings a badly needed head start in dealing with objects and people. But these systems go awry in two important ways that are the foundations of religion. First, we perceive the world of objects as essentially separate from the world of minds, making it possible for us to envision soulless bodies and bodiless souls. This helps explain why we believe in gods and an afterlife. Second, as we will see, our system of social understanding overshoots, inferring goals and desires where none exist. This makes us animists and creationists.

IV. Natural-born dualists

For those of us who are not autistic, the separateness of these two mechanisms, one for understanding the physical world and one for understanding the social world, gives rise to a duality of experience. We experience the world of material things as separate from the world of goals and desires. The biggest consequence has to do with the way we think of ourselves and others. We are dualists; it seems intuitively obvious that a physical body and a conscious entity—a mind or soul—are genuinely distinct. We don't feel that we *are* our bodies. Rather, we feel that we *occupy* them, we *possess* them, we *own* them.

This duality is immediately apparent in our imaginative life. Because we see people as separate from their bodies, we easily understand situations in which people's bodies are radically changed while their personhood stays intact. Kafka envisioned a man transformed into a gigantic insect; Homer described the plight of men transformed into pigs; in *Shrek 2* an ogre is transformed into a human being, and a donkey into a steed; in *Star Trek* a scheming villain forcibly occupies Captain Kirk's body so as to take

command of the *Enterprise*; in *The Tale of the Body Thief*, Anne Rice tells of a vampire and a human being who agree to trade bodies for a day; and in *13 Going on 30* a teenager wakes up as thirty-year-old Jennifer Garner. We don't think of these events as real, of course, but they are fully understandable; it makes intuitive sense to us that people can be separated from their bodies, and similar transformations show up in religions around the world.

This notion of an immaterial soul potentially separable from the body clashes starkly with the scientific view. For psychologists and neuroscientists, the brain is the source of mental life; our consciousness, emotions, and will are the products of neural processes. As the claim is sometimes put, *The mind is what the brain does*. I don't want to overstate the consensus here; there is no accepted theory as to precisely how this happens, and some scholars are skeptical that we will ever develop such a theory. But no scientist takes seriously Cartesian dualism, which posits that thinking need not involve the brain. There is just too much evidence against it.

Still, it *feels* right, even to those who have never had religious training, and even to young children. This became particularly clear to me one night when I was arguing with my six-year-old son, Max. I was telling him that he had to go to bed, and he said, "You can make me go to bed, but you can't make me go to sleep. It's *my* brain!" This piqued my interest, so I began to ask him questions about what the brain does and does not do. His answers showed an interesting split. He insisted that the brain was involved in perception—in seeing, hearing, tasting, and smelling—and he was adamant that it was responsible for thinking. But, he said, the brain was not essential for dreaming, for feeling sad, or for loving his brother. "That's what *I* do," Max said, "though my brain might help me out."

Max is not unusual. Children in our culture are taught that the brain is involved in thinking, but they interpret this in a narrow sense, as referring to conscious problem solving, academic rumination. They do not see the brain as the source of conscious experience; they do not identify it with their selves. They appear to think of it as a cognitive prosthesis—there is Max the person, and then there is his brain, which he uses to solve problems just as he might use a computer. In this commonsense conception the brain is, as Steven Pinker puts it, "a pocket PC for the soul."

If bodies and souls are thought of as separate, there can be bodies without souls. A corpse is seen as a body that used to have a soul. Most things—chairs, cups, trees—never had souls; they never had will or consciousness. At least some nonhuman animals are seen in the same way, as what Descartes described as "beast-machines," or complex automata. Some artificial creatures, such as industrial robots, Haitian zombies, and Jewish golems, are also seen as soulless beings, lacking free will or moral feeling.

Then there are souls without bodies. Most people I know believe in a God who created the universe, performs miracles, and listens to prayers. He is omnipotent and omniscient, possessing infinite kindness, justice, and mercy. But he does not in any literal sense have a body. Some people also believe in lesser noncorporeal beings that can temporarily take physical form or occupy human beings or animals: examples include angels, ghosts, poltergeists, succubi, dybbuks, and the demons that Jesus so frequently expelled from people's bodies.

This belief system opens the possibility that we ourselves can survive the death of our bodies. Most people believe that when the body is destroyed, the soul lives on. It might ascend to heaven, descend to hell, go off into some sort of parallel world, or occupy some other body, human or animal. Indeed, the

belief that the world teems with ancestor spirits—the souls of people who have been liberated from their bodies through death—is common across cultures. We can imagine our bodies being destroyed, our brains ceasing to function, our bones turning to dust, but it is harder—some would say impossible—to imagine the end of our very existence. The notion of a soul without a body makes sense to us.

Others have argued that rather than believing in an afterlife because we are dualists, we are dualists because we want to believe in an afterlife. This was Freud's position. He speculated that the "doctrine of the soul" emerged as a solution to the problem of death: if souls exist, then conscious experience need not come to an end. Or perhaps the motivation for belief in an afterlife is cultural: we believe it because religious authorities tell us that it is so, possibly because it serves the interests of powerful leaders to control the masses through the carrot of heaven and the stick of hell. But there is reason to favor the religion-as-accident theory.

In a significant study the psychologists Jesse Bering, of the University of Arkansas, and David Bjorklund, of Florida Atlantic University, told young children a story about an alligator and a mouse, complete with a series of pictures, that ended in tragedy: "Uh oh! Mr. Alligator sees Brown Mouse and is coming to get him!" [The children were shown a picture of the alligator eating the mouse.] "Well, it looks like Brown Mouse got eaten by Mr. Alligator. Brown Mouse is not alive anymore."

The experimenters asked the children a set of questions about the mouse's biological functioning—such as "Now that the mouse is no longer alive, will he ever need to go to the bathroom? Do his ears still work? Does his brain still work?"—and about the mouse's mental functioning, such as "Now that the mouse is no longer alive, is he still hungry? Is he thinking about the alligator? Does he still want to go home?"

As predicted, when asked about biological properties, the children appreciated the effects of death: no need for bathroom breaks; the ears don't work, and neither does the brain. The mouse's body is gone. But when asked about the psychological properties, more than half the children said that these would continue: the dead mouse can feel hunger, think thoughts, and have desires. The soul survives. And *children believe this more than adults do*, suggesting that although we have to learn which specific afterlife people in our culture believe in (heaven, reincarnation, a spirit world, and so on), the notion that life after death is possible is not learned at all. It is a by-product of how we naturally think about the world.

V. We've Evolved to be Creationists

This is just half the story. Our dualism makes it possible for us to think of supernatural entities and events; it is why such things make sense. But there is another factor that makes the perception of them compelling, often irresistible. We have what the anthropologist Pascal Boyer has called a hypertrophy of social cognition. We see purpose, intention, design, even when it is not there.

In 1944 the social psychologists Fritz Heider and Mary-Ann Simmel made a simple movie in which geometric figures—circles, squares, triangles—moved in certain systematic ways, designed to tell a tale. When shown this movie, people instinctively describe the figures as if they were specific types of people (bullies, victims, heroes) with goals and desires, and repeat pretty much the same story that the psychologists intended to tell. Further research has found that bounded figures aren't even

necessary—one can get much the same effect in movies where the "characters" are not single objects but moving groups, such as swarms of tiny squares.

Stewart Guthrie, an anthropologist at Fordham University, was the first modern scholar to notice the importance of this tendency as an explanation for religious thought. In his book *Faces in the Clouds*, Guthrie presents anecdotes and experiments showing that people attribute human characteristics to a striking range of real-world entities, including bicycles, bottles, clouds, fire, leaves, rain, volcanoes, and wind. We are hypersensitive to signs of agency—so much so that we see intention where only artifice or accident exists. As Guthrie puts it, the clothes have no emperor.

Our quickness to over-read purpose into things extends to the perception of intentional design. People have a terrible eye for randomness. If you show them a string of heads and tails that was produced by a random-number generator, they tend to think it is rigged—it looks orderly to them, too orderly. After 9/11 people claimed to see Satan in the billowing smoke from the World Trade Center. Before that some people were stirred by the Nun Bun, a baked good that bore an eerie resemblance to Mother Teresa. In November of 2004 someone posted on eBay a ten-year-old grilled cheese sandwich that looked remarkably like the Virgin Mary; it sold for \$28,000. (In response pranksters posted a grilled cheese sandwich bearing images of the Olsen twins, Mary-Kate and Ashley.) There are those who listen to the static from radios and other electronic devices and hear messages from dead people—a phenomenon presented with great seriousness in the Michael Keaton movie *White Noise*. Older readers who lived their formative years before CDs and MPEGs might remember listening intently for the significant and sometimes scatological messages that were said to come from records played backward.

Sometimes there really are signs of nonrandom and functional design. We are not being unreasonable when we observe that the eye seems to be crafted for seeing, or that the leaf insect seems colored with the goal of looking very much like a leaf. The evolutionary biologist Richard Dawkins begins *The Blind Watchmaker* by conceding this point: "Biology is the study of complicated things that give the appearance of having been designed for a purpose." Dawkins goes on to suggest that anyone before Darwin who did not believe in God was simply not paying attention.

Darwin changed everything. His great insight was that one could explain complex and adaptive design without positing a divine designer. Natural selection can be simulated on a computer; in fact, genetic algorithms, which mimic natural selection, are used to solve otherwise intractable computational problems. And we can see natural selection at work in case studies across the world, from the evolution of beak size in Galápagos finches to the arms race we engage in with many viruses, which have an unfortunate capacity to respond adaptively to vaccines.

Richard Dawkins may well be right when he describes the theory of natural selection as one of our species' finest accomplishments; it is an intellectually satisfying and empirically supported account of our own existence. But almost nobody believes it. One poll found that more than a third of college undergraduates believe that the Garden of Eden was where the first human beings appeared. And even among those who claim to endorse Darwinian evolution, many distort it in one way or another, often seeing it as a mysterious internal force driving species toward perfection. (Dawkins writes that it appears almost as if "the human brain is specifically designed to misunderstand Darwinism.") And if you are tempted to see this as a red state—blue state issue, think again: although it's true that more

Bush voters than Kerry voters are creationists, just about half of Kerry voters believe that God created human beings in their present form, and most of the rest believe that although we evolved from less-advanced life forms, God guided the process. Most Kerry voters want evolution to be taught either alongside creationism or not at all.

What's the problem with Darwin? His theory of evolution does clash with the religious beliefs that some people already hold. For Jews and Christians, God willed the world into being in six days, calling different things into existence. Other religions posit more physical processes on the part of the creator or creators, such as vomiting, procreation, masturbation, or the molding of clay. Not much room here for random variation and differential reproductive success.

But the real problem with natural selection is that it makes no intuitive sense. It is like quantum physics; we may intellectually grasp it, but it will never feel right to us. When we see a complex structure, we see it as the product of beliefs and goals and desires. Our social mode of understanding leaves it difficult for us to make sense of it any other way. Our gut feeling is that design requires a designer—a fact that is understandably exploited by those who argue against Darwin.

It's not surprising, then, that nascent creationist views are found in young children. Four-year-olds insist that everything has a purpose, including lions ("to go in the zoo") and clouds ("for raining"). When asked to explain why a bunch of rocks are pointy, adults prefer a physical explanation, while children choose a functional one, such as "so that animals could scratch on them when they get itchy." And when asked about the origin of animals and people, children tend to prefer explanations that involve an intentional creator, even if the adults raising them do not. Creationism—and belief in God—is bred in the bone.

VI. Religion and Science Will Always Clash

Some might argue that the preceding analysis of religion, based as it is on supernatural beliefs, does not apply to certain non-Western faiths. In his recent book, *The End of Faith*, the neuroscientist Sam Harris mounts a fierce attack on religion, much of it directed at Christianity and Islam, which he criticizes for what he sees as ridiculous factual claims and grotesque moral views. But then he turns to Buddhism, and his tone shifts to admiration—it is "the most complete methodology we have for discovering the intrinsic freedom of consciousness, unencumbered by any dogma." Surely this religion, if one wants to call it a religion, is not rooted in the dualist and creationist views that emerge in our childhood.

Fair enough. But while it may be true that "theologically correct" Buddhism explicitly rejects the notions of body-soul duality and immaterial entities with special powers, actual Buddhists believe in such things. (Harris himself recognizes this; at one point he complains about the millions of Buddhists who treat the Buddha as a Christ figure.) For that matter, although many Christian theologians are willing to endorse evolutionary biology—and it was legitimately front-page news when Pope John Paul II conceded that Darwin's theory of evolution might be correct—this should not distract us from the fact that many Christians think evolution is nonsense.

Or consider the notion that the soul escapes the body at death. There is little hint of such an idea in the Old Testament, although it enters into Judaism later on. The New Testament is notoriously unclear about the afterlife, and some Christian theologians have argued, on the basis of sources such as Paul's

letters to the Corinthians, that the idea of a soul's rising to heaven conflicts with biblical authority. In 1999 the pope himself cautioned people to think of heaven not as an actual place but, rather, as a form of existence—that of being in relation to God.

Despite all this, most Jews and Christians, as noted, believe in an afterlife—in fact, even people who claim to have no religion at all tend to believe in one. Our afterlife beliefs are clearly expressed in popular books such as *The Five People You Meet in Heaven* and *A Travel Guide to Heaven*. As the *Guide* puts it,

"Heaven is *dynamic*. It's bursting with excitement and action. It's the ultimate playground, created purely for our enjoyment, by someone who knows what enjoyment means, because He invented it. It's Disney World, Hawaii, Paris, Rome, and New York all rolled up into one. And it's *forever!* Heaven truly is the vacation that never ends."

(This sounds a bit like hell to me, but it is apparently to some people's taste.)

Religious authorities and scholars are often motivated to explore and reach out to science, as when the pope embraced evolution and the Dalai Lama became involved with neuroscience. They do this in part to make their world view more palatable to others, and in part because they are legitimately concerned about any clash with scientific findings. No honest person wants to be in the position of defending a view that makes manifestly false claims, so religious authorities and scholars often make serious efforts toward reconciliation—for instance, trying to interpret the Bible in a way that is consistent with what we know about the age of the earth.

If people got their religious ideas from ecclesiastical authorities, these efforts might lead religion away from the supernatural. Scientific views would spread through religious communities. Supernatural beliefs would gradually disappear as the theologically correct version of a religion gradually became consistent with the secular world view. As Stephen Jay Gould hoped, religion would stop stepping on science's toes.

But this scenario assumes the wrong account of where supernatural ideas come from. Religious teachings certainly shape many of the specific beliefs we hold; nobody is born with the idea that the birthplace of humanity was the Garden of Eden, or that the soul enters the body at the moment of conception, or that martyrs will be rewarded with sexual access to scores of virgins. These ideas are learned. But the universal themes of religion are not learned. They emerge as accidental by-products of our mental systems. They are part of human nature.

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