

CONFESSIONS OF AN OKLAHOMA EVOLUTIONIST:
THE GOOD, THE BAD, AND THE UGLY
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[Slide 2] I doubt that there is any place in America in which a scientist can simply study evolution and ignore the social context in which he or she works. And this context is primarily religious. I find that, in teaching about evolution, I cannot completely ignore religion. First, religion evolved; it is a human adaptation. To study humans, while ignoring religion, is an artificial omission. Second, an instructor (or a website for online courses) can impart information to students while ignoring the fact that this information might disturb them—but a teacher cannot, a teacher who is standing in front of them and inviting them to participate in the learning experience. I am only too aware that, when I teach them about evolution, many of the students are experiencing cognitive dissonance, something that is deeply disturbing to any human brain. None of us, consumed by cognitive dissonance, behaves with total grace.

And so I want to tell you some stories about my encounters with religion here in Oklahoma.

You might think that the examples would all be negative. I am sure this audience can think of a lot of likely examples of negative encounters with religion. But I am going to give you some positive examples as well. I will tell you tales of the good, as well as the bad and the ugly.

[Slide 3] First of all, I suspect that no human being is totally without religion. It is possible for a person to have no interest at all in religious doctrines or concepts. But nobody is without feelings that are frequently incorporated into religion. For example, love. The best religions are based on love. Christianity is supposed to be one of these, though many Christians have forgotten this. The hymn says, “Love divine, all loves excelling.” Religious people think love is divine, and comes from the Holy Spirit or some equivalent of it. But we know this cannot be true. Love is a form of altruism, which evolved. Religion did not produce it; religion uses it. Nothing wrong with this, of course. Another example is the feeling of awe. We can all think of examples when we have been overwhelmed by this feeling. One example for me was when I was hiking last summer in the Sierras. It was a day hike along the High Sierra Trail, five and a half miles (brutal to my muscles) in and out to Mehrten Creek. There I found a large granite overlook, with a view of Mineral King to the south. Ranges of mountains disappeared into the smog—the country’s worst—of the San Joaquin Valley, where I grew up. I found a little pool of cold snowmelt, where I soaked my feet and beheld the grandeur before me. It was like a resort, but one built by nature, and I enjoyed it even more because I had worked so hard to get there. No spirit has created that feeling of awe that overpowered me; but religion makes use of it. All humans are religious in the sense that we have these feelings.

[Slide 4] Is religion instinctual to humans? You can find both answers, yes and no, defended in print by myself. In my original *Encyclopedia of Evolution*, I explained that all humans inherited a religious instinct from our prehistoric ancestors, including those who painted the caves of Lascaux and Altamira. The religious life of our ancestors was rich and complex. The inner caverns had simple drawings, produced by people on spiritual quests. The famous paintings were in the outer vestibules, where the priests manipulated the religious feelings (especially awe) not

only by showing them these paintings of animals (which, in torchlight, seem almost alive) but by making music that echoed from the cavern walls. When I wrote *Life of Earth* and then revised the *Encyclopedia of Evolution*, I said that only the components of religion (such as love and awe) were instinctual, and that religious ideas (or memes) activated them. Richard Dawkins would say that religious memes are parasitic upon human instincts.

Regardless of the answer to this question, it is clear that human society will never be without religion. Margaret Atwood expressed this in *Year of the Flood* in which she created a religion adhered to by post-apocalyptic environmentalists. Nicholas Mosley, in his novel *Hopeful Monsters*, told of children in Soviet Russia who had a secret cave where they collected forbidden Orthodox ikons. Religions are almost alive. The established ones grow like old oak trees. New ones grow like weeds in soil freshly overturned by social disruption, as Protestantism did in the wake of the Black Death and as Mormonism and Christian Science did in nineteenth-century America.

[Slide 5] I therefore suggest that time is not well spent in opposing religion in society. Rather we should cultivate those components that we all revere, such as love and awe, while opposing those things such as intolerance and hatred and materialism that we all claim to find disgusting. Richard Dawkins, during his 2009 visit to Oklahoma (which the Oklahoma legislature denounced), said that one of the few pieces of good news in the world today is that people of every faith and of no faith are hungering for and working toward a world of peace and fairness.

Because humans are good, bad, and ugly, so also is religion. Now my stories begin.

[Slide 6] I am a native son of Oklahoma, and my roots go deep. I like to remind my students of this in case they think I am a liberal from California (where I did, in fact, grow up). My great-great-grandfather came here on the Trail of Tears. An orphan, he was adopted into the Hicks family. We think he was a full-blood, but cannot be sure; Chief John Ross himself was only one-eighth blood quantum. My great-great grandmother was part-Cherokee. My grandfather Edd Hicks was born in Indian Territory in the same year as and across the creek from Will Rogers.

[Slide 7] Edd spent his entire life being a sharecropper in Northeastern Oklahoma. He never took a vacation. His longest trip, as far as we can remember, was to Oklahoma City for his son's funeral (the son who was killed in a gasfield explosion). Farming was a complex life: he raised all of the food for the large family (nine kids, seven of whom reached adulthood), which required a mental library full of skills. My grandmother also needed a vast knowledge of homemaking and survival. You can't just turn on a wood stove, and canning for the winter requires careful preparations. And the kids learned a lot of things too. For example, in the days before pesticides, the way to control Colorado potato beetles was to pull them off the garden plants and throw them into hot water.

Edd was a powerfully religious man. He was convinced that he was totally right, and he usually was. He picked up and moved his family whenever he felt his principles compromised. He had Billy Sunday over for dinner one time. Now that's being pretty religious. But his main religious outlet was his certainty that he was making an honest living from the Lord's land. He believed that God made the land to be farmed (as opposed to being covered with blackjack oak trees). His

religion made him lead an exemplary life. That's why I'm putting him into the "good" category. It was a life that was so correct that his children could not follow in his steps. His two daughters, including my Mom, had intact families, but most of the sons had failed marriages. Two of them married women who had been married previously. This was unusual at the time, and quite out of keeping with Edd's uprightness.

It has occurred to me that Edd's brand of religious devotion was similar to that of the Amish, of whom we have a few in Oklahoma, down in south central Oklahoma near where I work. They have a very strong sense of taking care of the Lord's land—not preserving it as wilderness, but as orderly, productive farmland. Just like Edd. Edd was not an evangelist; like the Amish, he kept his religion at home.

[Slide 8] My older cousins remember him as being mean and grim. But I think that he was just trying, from a religious viewpoint, to force his personal world to make sense. Remember that his grandfather had come to Oklahoma during the greatest time of upheaval in Cherokee history. His grandmother had had an affair and gotten pregnant, causing his grandparents to divorce. Her branch of the family was and perhaps still is nearby, but Edd lied to himself and his family (perhaps the only lie he ever told) that they were no kin of his. Edd's father was something of a dreamer, looking for lost gold. Edd lived through the disruptions—first, of the Allotment Act, which divided up Cherokee land and got him onto the Dawes Roll, and second, of statehood. Edd's brother Lon was a no-good up to no good, stealing the family money and going to Las Vegas. The last time we heard from Lon was just before he died, in a welfare home in Los Angeles. He was buried in a common grave. In this context, no wonder Edd wanted to force his world to be orderly, transforming chaos into cosmos the way God was supposed to have done in Genesis 1.

If Edd were a Catholic, he would probably be Saint Edd of Oolagah. There are even family miracle stories. Right at the moment Edd died in the hospital, a ball of light supposedly appeared under his bed and vanished up to the ceiling. I think it was just headlights of a car outside the window, but my cousins hold out the possibility that it was something spiritual.

In my experience as an evolution instructor, I have also seen good religion. One example is a woman who took a couple of my classes. She had been ill all of her life, not one moment without pain, yet she never gave up, which is why she finished her undergraduate degree at age 36. She is one of those people Edd would have found inconvenient; she followed her dreams. She is a member of a very serious Christian sect. She accepted the science of evolution, and her religious beliefs, not trying to reconcile them. Perhaps, she thought, she would understand the answer in Heaven, but did not try to do so now: she was too busy blessing other people through her work. She had almost unlimited patience, except with fundamentalist students who thought that they knew all of the answers. I don't believe in angels (or perhaps I do; maybe angels are nerve impulses in our brains) but if there are any, she is one. I put her, too, in the good religion category.

[Slide 9] An historical example of good religion is the Anglican clergyman Gilbert White, who until his death in 1793 was the vicar of Selbourne, somewhere in England. He noticed everything in the natural world around him, and exchanged letters with other country gentry about nature,

particularly about birds. He wrote a book in 1789 that brought him unexpected fame. The *Natural History of Selbourne* is largely a collection of his letters about a disorganized jumble of subjects. But within this book is a primitive sort of science. He asked questions and tested hypotheses. For centuries, people had known that some birds migrated; you could hardly miss the geese and passenger pigeons flying north or south. But what about swallows? It took extensive correspondence for him to establish that swallows lived in Africa during exactly the time that they were missing from England. He had tested and confirmed the hypothesis that swallows migrate. In contrast, popular legend and even some scientists maintained that swallows spent the winter at the bottoms of lakes. He loved all of what he considered to be God's creation.

Gilbert White was the hero of a young Englishman named Charles Darwin. When Darwin's medical education didn't work out (he couldn't stand to watch amputations without anesthesia), he decided to become an Anglican clergyman. Why? Darwin was a believer, but not a passionate one. He wanted to be a clergyman not to preach the Gospel but because he wanted to live the kind of life Gilbert White lived: get your churchly duties out of the way, then you can spend all your time watching birds and (Darwin's special passion) collecting beetles. For Gilbert White, religion led to science. Granted, this was before even Darwin had thought about evolution. But I will still put Gilbert White into the "good" category.

Now it's time for the bad.

[Slide 10] None of the living descendants of Jacob Aville Rice, my paternal grandfather, remember many details of his life. He was born in Kansas, worked for an oil company in Cushing, here in Oklahoma, and died in California. And he was religiously crazy. He was an unofficial holy roller preacher, and was gone a lot of the time. One time, worked up into a religious fever, he gave six hundred dollars to another holy roller preacher. His family did not have food. My grandmother went to the preacher and explained the situation; the preacher gave her the money back, not telling Jake about it. When my father almost died from a botched childhood appendectomy, which left a huge scar, Jake barely paid attention. This neglect left an even bigger scar on my father's mind than the one on his body, a spiritual scar that haunted him for life and about which he sometimes told me.

In the Bible, Jesus said the most important law was love. But to Jake, rectitude was more important than love. Rectitude led Jake to be as ineffective a parent and citizen as it led Edd to be a good one. In one Bible passage, Jesus predicted that in the end times children will turn against their parents and parents against children. Jake considered this passage prescriptive, not descriptive, and felt it was his obligation to hate his children. This is what religion can do. He was nice to me, when I knew him as a child. Only later did it occur to me that the reason for this was that the Bible did not say that grandparents would or should turn against their grandchildren, so he was free to love me.

Jake was a good man at heart. In photos and movies he is always smiling. He loved to garden. He built things, such as humorous windmills for his garden. He would have been a good man to his family and friends if his religion had allowed him to be.

My dad was always worrying (with good reason, it turned out) about me getting involved in a religious cult. During my time in the no-Sunday-school only-one-cup-at-communion branch of the Church of Christ, a church that would make Baptists look liberal, I was more focused on rectitude than on love. These churches were so exclusive of doctrinal diversity that, in one case, one of their congregations consisted entirely of an old man and his wife. Since the womenfolk could not have any leadership role, the man had to do everything while his wife listened. This, too, was an example of the badness of religion. And, as it turned out, it was science that saved me. I kept asking questions, and realized that my cult had no answers. Not just about science, but even about the Bible. Science is about asking and answering questions in such a way that you leave your inevitable human biases behind as much as possible. This is what got me in trouble with and eventually freed me from my cult.

[Slide 11] What we can learn from Jake, and from my experience, is that religion can take over your brain. The right set of memes can manipulate and warp your mental processes. I know this from the inside. Examples of religiously-inspired mass hysteria are too numerous to even think about, everything from St. Bartholomew's Day Massacre in France to the Pilgrims burning Pequot Indian villagers to death—something that William Bradford described as a sweet savor unto the Lord. As we are all too aware, it is not just Christian fundamentalists who are caught in the river of Religion Gone Bad.

[Slide 12] There are also innumerable examples of religious leaders who use memes as harnesses on the brain lobes of their psychological victims, from whom they extract lots of money. One of my uncles (another of Jake's sons) was a follower of a preacher named Billy Jean Hargis. Another uncle (a son of Edd) followed Jimmy Swaggart. Another uncle (another son of Edd) followed Garner Ted Armstrong, as I did for a while, before I was rescued by the Church of Christ cult. (God, how did my brain ever survive?) And I wonder how much of Oral Roberts' tower, which he said a 900-foot-tall Jesus told him to build, was paid for by the money sent to him by my wife's grandmother?

[Slide 13] All over the country there are creationists, including some who have managed to get advanced science degrees (in some cases by pretending to not be creationists), who either know they are lying or else have deceived themselves completely. They make statements that others prove to be incorrect. This has no effect on them, like a substrate that slips off of a protein that has no binding site for it. The creation scientists simply say the same thing over again in some other place. Perhaps the most notorious is Carl Baugh, who runs a museum down in Glen Rose, Texas that claims that there are human and dinosaur footprints together in the same sedimentary deposits. The bed of the Paluxy River does, in fact, have dinosaur footprints; and in the past some men carved human footprints in with them to sell to unsuspecting tourists. But, claims Baugh, his prints are real. I wonder if Baugh doesn't even remember carving them, so consumed is his mind by the Memes. He makes all kinds of claims, without evidence and even without Biblical foundation. I heard him claim that, before the Flood, there were no craters on the moon. His audience simply believed him. I could almost see the Memes, like ringwraiths, jumping out of his mouth and into their brains.

Religion is not good or bad. It is just a mental process that facilitates good or evil. Although, I must admit, religion is very good at turning good people into bad people (Jake), and giving other people bad reasons to do good things (Edd).

Which brings us to the ugly.

You usually don't hear religion presented at a scientific meeting. But this is Oklahoma. In March 2012, the Southwest and Rocky Mountain Section of the American Association for the Advancement of Science held its meeting at the University of Tulsa, as it does about every three years. A scientist at Northwestern Oklahoma State University organized a science-and-religion symposium for this meeting. Religion was one of the topics for which this symposium was designed. So when the Dean of Science and Engineering at Oral Roberts University was invited as a participant in this symposium, you get what you ask for: he gave the usual Intelligent Design line of reasoning. Which is: Here's some stuff that I cannot imagine could have evolved, therefore it didn't. Richard Dawkins calls this the argument from personal incredulity.

So far, no surprise. But this speaker proceeded to tell us, not in a statement of belief but as fact, that God told Oral Roberts to build his university. It was only afterward that I recovered from the shock enough to realize that this was way outside the bounds even of a religion-science symposium. This wasn't religion in general; it was something uncomfortably close to declaring the divinity of Oral Roberts. Maybe Oral Roberts wasn't God but he was the pure conduit of God. The Oral Roberts brain parasite lives on and once in a while slips into scientific meetings. The audience was small and the meme died like a mutation in a small, isolated gene pool.

You probably think that this is my example of the Ugly. Actually not. The ugly part was *my* presentation at that symposium.

[Slide 14] I took direct aim at the idea that a God of love expresses himself through the natural world. Some people cling to a belief in a loving God, yet consider nature, *including evolution*, to be the working out of God's will. They consider this to be a reconciliation of science and Christianity. I understand the book by Francis Collins, the director of the NIH and certainly a good scientist, takes this approach. But natural selection can be very cruel, and as such is completely inconsistent with a God of love. It isn't always cruel; but it does not reflect an evil God any more than it does a good one.

[Slide 15] And I got rather graphic about examples of cruelty in nature. I will just share one here. Lesch-Nyhan syndrome is caused by a single mutation. But this single mutation causes the children who have it to feel an irresistible urge to mutilate themselves. They chew their fingers and lips. They try to gouge out their own eyes. They know what they are doing and they feel the pain, but cannot control themselves. This, my friends, is the ugly part. To an evolutionary scientist, this is a random product of mutation. But how can it be Gods' will?

[Slide 16] We are far from being the first people to reflect upon this. To find an example that is almost three thousand years old, you need look no further than the Bible. I always wondered how the book of Ecclesiastes made it into the Bible. It is pure agnosticism with a garnish of God-talk. It contains some of the most sublime poetry ever written. *A time to be born, a time to die; a time*

to love, a time to hate; a time to embrace, a time to refrain from embracing. To Qoheleth, the author of this work (not, I suspect, Solomon, to whom it is often attributed), when you look at human experience, today and throughout human history, you see no Hand of God. There seems to be no justice in life. Nothing but luck—good luck and bad luck, unconnected to reward and punishment, and carrying out no divine plan in the world. Qoheleth said in chapter 9, verse 11. “I have seen [that] the race is not to the swift or the battle to the strong, nor do resources come to the wise or wealth to the brilliant or esteem to the learned; but time and chance happen to them all.” In this way, he said, humans and beasts are the same: “As dies one, so dies the other.”

So, as I close, I point out that this last part is what drove Charles Darwin into agnosticism. It wasn't science. It wasn't an antipathy toward a God of love. It was simply that, as he wrote to his Christian friend and defender of evolution Asa Gray, there is too much cruelty in the world. Darwin knew about the exquisite designs by which parasites afflict their hosts. Such adaptations were not stupidly simple; they were designed—either by God or by natural selection. Darwin chose, you see, to not believe in a cruel God. And for that, creationists vilify him.

You don't hear much from creationists about the exquisite design of parasites. Oh the stories I could tell. Sometimes a person, or at least a biologist, can know too much. I've never heard creationists cite mosquitoes and malaria, fleas and plague, or those worms that alter the behavior of their hosts' brains, as evidence of the Christian God. I wonder what Edd would think. I wonder what Jake would think. All I know is that the human brain did not evolve to reason; it evolved to rationalize. Intelligence and creativity are tools of natural and sexual selection, rather than tools to analyze the universe. So how can I, with my human brain, ever know what the universe is all about? Yet in the last few centuries we have figured out a lot about the history of the universe and of life on Earth. It is frankly astonishing that, with our brains so enslaved to emotion and religion, we have figured out as much as we have.