

Arguing Atheism

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Arguing atheism, for or against, has been an active interest in recent years, with many books and blogs popping up. I want to express my opinion about which kinds of arguments are effective. But first, I begin with some history.

History

Ten thousand years ago there were about five million people scattered thinly around the world. They had no science, and understood nothing about how anything works. Their only explanation for how something happens was that someone makes it happen. Someone back then might stumble upon a campfire, and ask: What made that campfire appear there? And someone else might answer: Ug made that campfire. The explanation works sometimes, and since they had no other kind of explanation, they used it all the time. What makes the sun move across the sky? Ra makes it move. To ancient people, the sun seemed to be about the size of a beach ball, and it seemed to be just above the clouds; not so big and not so far away, and not beyond belief that someone could be moving it across the sky. We don't see Ra making it move, so Ra must be invisible. What makes thunder and lightning? Thor makes them.

Where did life come from? Yahweh made it. What makes a body alive at one moment and dead the next? Their imaginative answer was that a magical invisible substance (a soul or spirit or ghost) enters a body (at conception? at birth?) and that gives it life, and later this magical substance leaves the body, and that causes its death. How do people think and act? They didn't understand how mere matter could do something so wonderful, so the magical invisible soul must do it.

These answers raise new questions. Where does Ra (the sun god) live and who are his relatives? Where does a soul come from and where does it go? The ancient people lacked science, but they didn't lack imagination. They invented many gods and many stories about them, and they fought about whose stories were the truth.

Present

We have come a long way. We now know a lot about the structure of the universe, about the conversion from mass to energy, about computing and communication, about the functioning of living organisms, and even about how life began on this planet, and evolved into the amazing variety that we see.

In the previous paragraph, the word “we” is very misleading. The people who know these things are scientists. What proportion of the world's population are scientists? The estimates that I was able to find, admittedly rough, say something like 0.0005, or one-twentieth of one percent, or one in two thousand. The other 99.95% of the world's population who are not scientists do not know much about how things work. They can use a cell phone and even a computer, but they have no idea how it works. They can say “Being a lawyer is in her DNA.”, but they have no idea what DNA is or how it determines your characteristics. They don't know how nuclear power works, or how it generates electricity.

Some of the people who are not scientists understand that, even though they do not know how things work, things do not work by magic. They accept that scientists have figured out how things work, or at least have gone a long way toward that understanding. In the USA, that's about 10% of the population; in Canada, about 20%; in Europe, about 30%; in China, about 60%. The remaining 40% or 70% or 80% or 90% of the population still believe that a magical person (God) makes things happen, and that a magical substance (soul) enters and leaves a human body. An athlete who has just scored a goal points skyward, at God, to thank him for allowing or causing the goal; apparently these athletes do not even know that the Earth is round, and that athletes around the world are pointing in all different directions. The vast majority of people today are almost as ignorant of science as the people of ten thousand years ago. "We" have not come a long way.

Future

My preference, as an atheist, is that we keep all the religious stories and music and celebrations, but we downgrade them to culture. We are pleased to share our ethnic costumes and ethnic foods and ethnic music with people of other cultures. Likewise we can tell the old religious stories and sing the songs and celebrate the special days with other people, without asking them to commit to anything, and with no suggestion that the stories are true. This downgrading has happened already with stories about Zeus and Apollo and Thor. Stories about God are like stories about Superman. Stories about Jesus are like stories about Merlin the Magician. There's no reason to stop telling them; we just have to stop believing them.

Definitions of God

To argue for or against the existence of God, you need a definition of God. But there is no single agreed definition. The various definitions fill the range from self-contradictory (overdefinition) on one end of the spectrum, to meaningless (underdefinition) on the other end. The self-contradictions (inconsistencies) in the definitions used by people who claim too much for God are well-known. For example, if God is all-good and all-powerful, how can there be evil in the world? The religious person's answer: it's a mystery; we cannot hope to understand it. The atheist's answer: if the definition of a thing is self-contradictory, it's not a mystery, the thing does not exist. On the other end of the spectrum, there are religious scholars who are well aware of the folly of claiming too much about God, so they make few claims or no claims. God just is. They have chosen meaninglessness over self-contradiction.

In the year 1078, St. Anselm of Canterbury "proved" the existence of God as follows. He defined God as being perfect. He said that anything lacking existence isn't perfect. He concluded that God exists.

The dodo is a kind of bird that existed before 1700, and became extinct after that date. Before 1700, the correct answer to the question "Does a dodo exist?" was "yes". After 1700, the correct answer to the same question was "no". The question refers to the same kind of bird at both times it is asked, but its answer changes. Apparently, existence is not part of the definition of dodo. So define an edodo as a kind of bird with all the same properties as a dodo, plus existence. Then, by definition, an edodo exists. So a bird that has all the properties of a dodo exists, even today.

St. Anselm's idiotic argument convinced people for eight hundred years. By defining God as perfect, and defining perfect as including existence, St. Anselm tried to sneak existence into the definition of God. We can just as easily sneak existence into the definition of anything. Today most of us realize that you can't make existence or nonexistence be part of a thing's definition. You have to define it first, and then consider whether it exists.

How could people accept such a stupid argument? For many people, an argument is convincing if they like the conclusion, and unconvincing if they don't like the conclusion. The argument's logic is irrelevant.

Science versus Religion

Science is a method of viewing and understanding the world. So is religion. There are people who accept the scientific view and reject the religious view. There are people who accept the religious view and reject the scientific view. There are people who consider the two views to be complementary: together they provide greater understanding than either view alone. There are people who believe that some aspects of the world can be understood only through science and not through religion, while other aspects of the world can be understood only through religion and not through science.

In religion, the source of knowledge is authority, which could be a person or a book or a combination. Challenges to accepted belief are discouraged. In the past, the penalty for heresy (challenging accepted belief) was death, or torture until repentance; that's very strong discouragement. The Christian Inquisitions of the Middle Ages were terrifying. Even today, some Islamic religious leaders still issue death sentence fatwas against heretics. Torturing and murdering heretics has been dropped by some modern religions, but they may consider atheism to be immoral and evil. Some religions, and some religious people of all religions, are open to some degree of challenge, perhaps to the details of the religion rather than to the core beliefs. But the official position of the religion has to be to discourage challenge to authority because authority is all the religion has.

In science, authority counts for nothing; the only source of knowledge is evidence. Science doesn't have "beliefs"; rather, it has best currently available explanations. Science welcomes challenges to its current explanations, and is always eager to embrace better explanations, especially when new evidence comes to light. But scientists are people, and people are not perfect, and it must be admitted that some scientists sometimes discourage challenges to their current explanations. But the scientific ideal is to welcome challenge. Science is self-correcting, whereas religion is self-protecting. The standards and methods of religion and science are incompatible.

The difference between science and religion is epitomized by their attitudes to the words "faith" and "skepticism". To religious people, faith is a virtue; it means belief in their religion without needing evidence, or even against evidence. To religious people, skepticism is perverse; it means doubting their religion. To scientists, believing without evidence, or against evidence, is perverse, and doubting whenever evidence is absent or weak is a virtue.

As science has progressed, religion has retreated. I do not mean that fewer people are religious; I suspect that the fraction of religious people has decreased, but there are no reliable numbers older than 50 years to say how many people were religious in the past. I mean that the claims made by religion have retreated when confronted with undeniable evidence. The Earth was

formed by gravitational forces acting on the debris from stellar explosions approximately 4.5 billion years ago. The Earth is approximately spherical, not flat. The Earth is one of many planets orbiting one of many stars, and is not the center of the universe. Life began spontaneously on this planet about 4.3 billion years ago, and may have begun independently on many other planets. On this planet, life evolved from common ancestors to many different forms. We are animals, not so different from other animals who communicate with each other, who think and plan, who have hopes and fears. On each of these points, the major religions fought against acceptance of the scientific evidence because it contradicted religious beliefs. Ultimately, grudgingly, most religions have accepted most of the scientific evidence by modifying or retracting the conflicting religious beliefs. Some people still deny the evidence in order to retain their religious beliefs.

Social progress has also caused religious retreat. Religions have claimed that sexism, racism, and [homophobia](#) are ordained by God, but in some parts of the world the more progressive religions have retreated from their sexist, racist, and homophobic past.

The kind of retreat preferred by some people is disengagement. God used to be actively in control of everything that happens. Now God mainly watches without interfering. But if you worship God enough, and pray to him hard enough, God can still steer events in your favor, if he wants to, which he rarely does.

The kind of retreat preferred by other people is abstraction. God used to be human-like, living in heaven, with wants and plans and abilities. Now God is just a quality that's everywhere and nowhere. Albert Einstein believed in God, but when asked what was the nature of his god, he replied that it was the entire universe. That's a good choice because it definitely exists, but it's not a god you would pray to, not a god who cares, not what people generally mean by "god".

Stephen Hawking had a story about the time the Vatican hosted a conference on the physics of the early universe. Many famous physicists were gathered together, and just before the conference started, they were addressed by the Pope. He wished them well in their enquiries concerning the first few moments after the Big Bang, but he admonished them not to enquire about what caused the Big Bang, or what led up to it. That, he said, was God's domain. The Pope did not know that the subject of Stephen Hawking's presentation was exactly what the Pope told them not to think about. The Roman Catholic Church had retreated so far, but it was still drawing a line.

There is a weak correlation between education and atheism: the more educated you are, the more likely you are to be atheist; the less educated you are, the more religious. There is a strong correlation between scientists and atheists: 93% of the members of the U.S. National Academy of Science are atheists [E.J.Larson and L.Witham: "Leading scientists still reject God", *Nature* 394(6691):313, 1998 July 23]. But the correlation is not perfect: there are some well educated religious people and some uneducated atheists. There are people who are both scientists and religious. Perhaps they are scientists when at work and religious the rest of the time, or perhaps they compartmentalize their brains, relegating some aspects of their lives to science and other aspects to religion, not allowing the different aspects to confront each other. But they cannot be both scientists and religious about the same aspects at the same time. That's because science and religion have conflicting standards and methods.

Origin of Life

Some people are fond of saying “No-one knows how life began.”, because those people don't know, and they follow that statement with the non sequitur “Therefore God made it.”. But scientists do know how life began. They don't know the exact time and place, but it was probably somewhere in the Earth's ocean, or possibly in some hot springs, about 4.3 billion years ago. When certain molecules that were present in the ocean back then happen to encounter each other, there is a tiny chemical event that creates a self-reproducing (or self-replicating) molecule. When a self-reproducing molecule encounters certain ordinary molecules, the reaction produces two self-reproducing molecules (and that is why it is called self-reproducing). As time passes, there are more and more of these self-reproducing molecules. Chance encounters between self-reproducing molecules produce more complex self-reproducing molecules. Eventually we get amino acids and primitive versions of protein molecules. Some molecules stick together. As time passes, the complexity of the molecules and groups of molecules increases. Eventually it is complex enough to call it life. The early stages of this progression can be done in a laboratory, greatly speeded up, by forcing all the “chance encounters” to happen. But most people don't know this.

People who, faced with the laboratory evidence, accept that life could get started this way, still have a problem: probability. On any given day, the chance that the right molecules will bump into each other to get life started may be very very low, perhaps so low that we can call it virtually impossible. It would take a miracle, and that's God's job.

If the probability that life gets started on any given day, anywhere in the world, is p , then the probability that life gets started in a period of d days is $1 - (1-p)^d$. I don't know exactly what value to assign to p , but to illustrate the calculation, let me suppose $p = 0.00000001$, or one in one hundred million, which is extremely small. In ten million years there are 3,652,500,000 days, so the probability that life gets started in a period of ten million years is $1 - (1-0.00000001)^{3652500000}$, which is 0.999999999999999889, or 99.999999999999889%. In other words, it is virtually certain that life will get started, given long enough. And since the formation of the Earth, there have been 450 consecutive periods of ten million years. No miracle needed. Even though this is elementary math, most people don't know it.

Life may have begun here on Earth many times. Some of the beginnings may have fizzled out; others may have been pushed out by a more dominant life form. And perhaps some forms that began independently combined.

Popular accounts of the search for extra-terrestrial life talk about finding planets in the Goldilocks zone. That means finding planets that are not too hot, not too cold, not too wet, not too dry, and so on. Originally, the Goldilocks zone was a religious argument for the existence of God. If Earth were just 20° warmer or 20° cooler or 20% wetter or 20% drier or the air had 20% more oxygen or 20% less, then life as we know it would not be possible. The delicate balance that we have is so improbable that it must be the work of God. As often as this argument has been made, it has been debunked. Imagine someone who walks down a road just after a rainfall, and sees an irregularly shaped pothole filled with water. He is amazed that the pothole just exactly fits the water in it. If the pothole were any smaller, then that amount of water would not fit in it. If the pothole were a different shape, then that shape of water would not fit in it. This person concludes that the pothole must have been created to fit the water. Obviously, the water fits the pothole, and life on this planet fits the conditions on this planet. Life here formed from the matter that is here, and evolved to fit conditions that it found and that it created. And the

conditions have changed a lot over the eons. Those species that could not adapt to the new conditions died, and those that could flourished. There are extremophiles living at hundreds of degrees, in deep freeze, in extreme pressures, in extreme chemical concentrations, without oxygen, and in all conditions that can be found anywhere on Earth. There is no Goldilocks zone.

I expect that life is plentiful throughout the universe. It might not be carbon-based; it might not be reliant on water; it might not resemble life on Earth. My concern is not whether we will find life on other planets, but whether we will recognize it when we find it.

Appeal of Religion

Religion means different things to different people. It can include any or all of the following.

- an authority, which may be a book or books or person or ordained group of people
- ethical rules and other rules of behavior, dictated by the authority
- belief in the supernatural, such as God, souls, miracles, the devil, angels, ghosts, heaven, hell
- myths, ancient and modern
- art and music, such as hymns, gospel music, chants, and religiously inspired symphonies
- various celebrations on special holy days each year
- family customs
- a mutually supportive community (church, synagogue, mosque)
- charity
- religious emotion
- prayers

The parts of religion that conflict with science are reliance on authority, and belief in the supernatural. Some parts of religion have good psychological and social value. Family bonds are strengthened by shared beliefs. A church or synagogue or mosque provides a mutually supportive community where you find friends, and maybe a spouse; it is a place where you feel you belong. The good parts of religion cannot easily be separated from the bad; all of these aspects of religion are tangled together, dependent on each other. Reliance on authority and belief in the supernatural are woven into the ethics, the stories, the art, the music, the family customs, and the charity. The fact that religion provides a framework for all your life's activities is very appealing. Asking someone to give up their religion may be asking them to give up their entire way of life.

A strong appeal of religion is that it provides absolute answers to both questions of fact and questions of ethics. That's the answer because God says so. (Actually, a book or a person says that God says so.) A religious absolute answer is so much easier than years of scientific study, and more satisfying than science's currently best available answer. A religious absolute answer is so much easier and more satisfying than secular ethics' equivocal search for the kindest and fairest answer.

Some religious people don't believe in evolution. They can't see it happening. Telling them that it took 4.3 billion years is just meaningless to them. They believe Earth is about 5000 years old; that's as big a number as they can comprehend. In that short time, there's no way the complexity of life forms around them could have evolved, so someone (God) must have designed them. If a person is just a thing, how can a person be conscious? To understand how consciousness arises from the complexity of a person's 37 trillion cells is beyond their grasp. So consciousness must be the result of a magical, invisible soul. Part of the appeal of religion over science is that science's explanations involve [big numbers](#) that ordinary people cannot understand, and religion's explanations don't.

We have a powerful fear of death for the good evolutionary reason that it helps us to stay alive. Religion exploits that fear by promising that if you are religious, you will have eternal life in a beautiful place where everyone loves everyone. It's obvious that a dead and rotting body isn't in heaven, so once again, the imaginary immaterial soul is called on to fulfil the promise.

Another reason people believe in souls is our inability to imagine our own non-existence. You can imagine the world carrying on after your death. But to imagine the world, you have to have a vantage point: you have to "see" and "hear" the world, even in your imagination, from some location. Since your body won't be functional and in that location after your death, you are imagining something immaterial, your soul, in that location, and imagining that it is capable of seeing and hearing, even though it lacks the physical equipment necessary for seeing and hearing.

People who don't imagine that they will carry on observing the world after their death sometimes describe death as darkness and silence. Countless poems and metaphors about death use the words "darkness" and "silence". But this is completely wrong. Darkness is something you experience if you are capable of seeing but there is no light entering your eyes. Silence is something you experience if you are capable of hearing but there is no sound entering your ears. Being dead is not something you experience. The only good description of how the world will seem to you after your death is to say that it will seem exactly as it seemed to you before your conception (the sex act that created you). Did the billions of years before your birth seem dark and silent to you? Did it seem scary to you not to have a body? Of course not; it was neither dark nor silent, and you were not scared because there was no you. And for the billions of years after your death, it will not seem dark, silent, or scary to you because there will again be no you.

Religion is taught to people when they are young. You tend to believe whatever you are taught when you are young as if your life depends on it. That's because your life often does depend on what you are taught when you are young. Don't eat that, it's poison. Don't run into the street. Evolution has produced uncritical children because children who doubted what they were told tended to die young and not reproduce. Later in life, when someone contradicts what you learned early, your childhood feelings of fear are rekindled, and you may become angry when your foundation is challenged.

The love of God, or Jesus, or Mohammed, or Buddha, or ... is real, even if God, or Jesus, or Mohammed, or Buddha, or ... isn't real. It can be passionate; it can fulfil the natural need to love someone; it can fulfil the need for a caring and protecting parent. To be given a target for your love, and be told that your love is reciprocated, has strong appeal.

Some people who have doubts about religion remain religious due to Pascal's Wager. If they are religious and religion is false, there's no harm done; but if they aren't religious and religion is true, God will be angry and they'll go to hell. So it's safer to be religious. The appeal, or perhaps motivation would be a better word here, is fear of the consequences of being atheist. But those consequences are part of the religious beliefs in question. From an atheist point of view, the consequences of being religious can include irrationality, unkind ethics, and wasting large parts of your only life on false beliefs. Furthermore, Pascal's Wager does not tell you which religion you should believe in order to be safe; it could be any of the existing religions, or any of an infinite number of others that can be imagined.

The appeal of religion is primarily emotional, and the arguments against religion are primarily intellectual. For most of the people of the world, their emotions are stronger than their intellect.

Stages of Religious Development

I want to identify three stages of religious development.

- tribal religion
- tolerant religion
- atheism

Calling them stages of religious development isn't quite right; atheism is not a stage of religious development any more than adulthood is a stage of childhood. I do not mean that an individual necessarily goes through these stages, though they might. I intend these stages to be what humanity as a whole goes through. But we do not go through these stages together; different societies are at different stages. My extremely rough guess is that 40% of people are in the tribal religion stage, 30% are in the tolerant religion stage, and 30% are in the atheist stage.

In the tribal religion stage, you mistrust people who are not believers in your own religion. Many wars and conflicts have been fought, and are still being fought, between religions. Some religions prohibit their members from marrying anyone who is not a member of their religion, or insist that the outsider must convert to their religion. And in some countries, you cannot hold a public office without declaring your allegiance to the national religion. All of these behaviors are part of tribal religion.

In the tolerant religion stage, we each pledge the following.

- I accept your right to follow a different religion from me.
- I accept that you can be a good person even though you have a different religion.
- I respect you for your good qualities (kindness, intelligence, athleticism, ...) even though you have a different religion.

Unfortunately, it is difficult to make these pledges to a person in the tribal stage who is not reciprocating, and may even consider you to be evil. The tolerant stage is difficult to maintain, even toward others who are reciprocating. You cannot think your own religion is true without thinking that other religions are false, and it's not easy to respect people whose beliefs are false in your opinion, and whose ethics you strongly disagree with. Your ethical beliefs may preclude respect for theirs.

The tolerant stage is characterized by freedom of religion; the atheist stage is characterized by freedom from religion. Atheists may consider themselves exempt from the tolerance pledges above; atheists do not have a religion vying for space in the spectrum of religions; atheists disavow all religions. But I think a tolerance pledge is very important for atheists too. So I would like to modify the pledge as follows.

- I accept your right to follow your choice of religion, or none.
- I accept that you can be a good person no matter what choice of religion you follow, or none.
- I respect you for your good qualities (kindness, intelligence, athleticism, ...) no matter what choice of religion you follow, or none.

It is difficult for an atheist to pledge respect to someone whose religious beliefs are ridiculous to the atheist. It is even more difficult for an atheist to pledge respect to someone whose religious ethics are barbaric in the opinion of the atheist. If, in the future, atheists form the majority, then religious people will need protection from atheist discrimination. China is already majority atheist, and Europe is not far behind.

For the sake of peace, we need people to move out of the tribal stage. For the sake of science, we need people to move into the atheist stage. Unfortunately, the gap between these two stages is too wide to make the move from tribal to atheist directly. Most of the movement right now is

from the tribal stage to the tolerant stage. A good example was the insistence of George W. Bush and Tony Blair that the fight against al-Qaeda and ISIS is not a fight against their religion. But al-Qaeda and ISIS are in the tribal stage, and they insist that their fight is religious.

People in the tribal religious stage reject and denounce all criticism of their specific religion. Some of the people in the tolerant religious stage have generalized this attitude to say we shouldn't criticize anyone's religious beliefs. The effect is to move the protective barriers outward; they were around each religion; now there is one protective barrier around all religions together. This new barrier is enshrined in social norms, and occasionally in law. Protecting religion against criticism makes it difficult to argue for atheism. Even when it is legal, it may be unkind to attack someone's sincerely held beliefs; if they begin to doubt, they can become stressed. The pledges listed earlier are for the right to believe, and respect for a person, but not respect for all their beliefs. You can respect, and even love, someone for their many good qualities, even though you do not respect some of their beliefs. The pledges leave room for criticism, but it is essential that all criticisms be made politely and gently.

Atheist Uncertainty

Atheists criticize religious people for claiming to know things they do not know, and cannot know. They may have faith, they may believe God exists, but they cannot know that God exists. Atheists want to be careful that they are not subject to the same criticism. How can they know that God does not exist? So, to be cautious, to avoid claiming certainty, some atheists say "God probably does not exist.", and that is the wording used in atheist advertisements. That wording tells religious people that atheists are uncertain about the existence of God; religious people conclude that atheists, by their own admission, don't know what they are talking about.

How can you know that Zeus does not exist? How can you know that Superman does not exist? The stories about Superman say he has limited powers, and they tell us where he came from and why he has his powers. The authors of the Superman stories made an attempt to make him believable. The stories about God say he has unlimited powers, and he just works by magic; no attempt has been made to explain where he came from or how he did the amazing things that he is supposed to have done (like create the universe). This makes the existence of Superman more believable than the existence of God.

How can you know anything? You can't be sure you are reading these words right now; you might be dreaming that you are reading. I can't be absolutely sure that my name is Eric Hehner, and in fact I know someone who found out late in life that his name, as recorded officially at his birth, was not what he had thought. If I am asked "Is your name Eric Hehner?", I don't answer "probably". That would say that the probability is more than 50% but less than 100%, and that would suggest far more uncertainty than I intend to convey. I put the probability at about 99.99999%, and with very little roundoff error, that can be rounded to 100%, so I answer "yes".

If I am asked whether God exists, I say "no". If I say "probably not", I suggest more uncertainty than I intend to convey. My confidence is at least as good as my confidence that Zeus does not exist, and better than my confidence that Superman does not exist, and I would not hesitate to say "no" to them. My confidence, although not perfect, rounded to the nearest percent, is 100%, and that merits the simple answer "no".

Arguing Atheism

Atheists use a variety of ways to try to persuade religious people to become atheist. One is logic. The atheist points out the myriad of inconsistencies and impossibilities in religion. But logic is a weak argument to most people on most issues. Logic says nothing to the emotional appeal of religion. The audience for whom this kind of argument is effective consists of people who have very little emotional commitment to religion, and who can follow and appreciate logical arguments. That's a small audience.

Another kind of argument used by atheists is insult and ridicule. This kind of argument is counter-productive. It makes religious people think that atheists are nasty, arrogant, and not worth listening to.

All arguments of all kinds are quickly forgotten; what's remembered is who says it. What's most persuasive to most people is whether they know, like, and respect the person who is making the argument. People want to be liked by the people around them, so they believe what the people around them want them to believe. That's why most people have the same beliefs as their family and friends.

It must be as unpleasant for a religious person to hear someone preach atheism at them as it is for me to hear someone preach religion at me. Do not preach atheism; teach science, and atheism will follow.

[other essays](#)