

GOD?

Leaving Christianity

**A Collection of Essays
by Jeff Lewis**

Third Print Edition

God?

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By Jeff Lewis

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This book is dedicated to my wife, for dealing with such a big change in my worldview *after* we'd already been married, and to my daughter, for inspiring me to sort out my view on these issues to be sure that I was raising her properly.

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<http://www.jefflewis.net>

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Foreword

When I came to the conclusion that I could no longer accept Christianity, it was only after several years of research and intense self-reflection. During the course of that transformation and afterwards, I wrote several essays which I thought some people might find interesting. This collection documents the thought process that I went through in abandoning Christianity, and explains a little bit the beliefs that I have, now.

While the essays are all collected here in one place, they were originally written as stand-alone essays, so they can be read in any order and still make sense. The arguments within them may not be entirely consistent, as my stance regarding religion has developed over the time that the essays were written. I have made some editorial changes to the essays in an attempt to make certain sections more clear, but I've tried not to change the sentiment, even if it's one of those areas where my stance has changed.

All of these essays are included in the Religious Essays portion of my website¹, but some were written originally for other portions of my site, and have been adapted, sometimes with liberal editing, for this collection. For reference, here is a list of those essays, along with links to their original versions.

- Musings on the Existence of the Soul
<http://www.jefflewis.net/philosophy4.html>
- Further Musings on the Soul
http://www.jefflewis.net/blog/2008/04/further_musings_on_the_soul.html
- Problems with a Day-Age Interpretation of Genesis
http://www.jefflewis.net/blog/2005/12/problems_with_dayage_interpret.html
- Confidence in Historical Knowledge
http://www.jefflewis.net/confidence_in_historical_knowledge.html
- Confidence in Scientific Knowledge
http://www.jefflewis.net/blog/2010/02/confidence_in_scientific_knowl.html
- Pascal's Wager
http://www.jefflewis.net/blog/2008/08/pascals_wager.html
- Liar, Lunatic, or Lord ... Or Something Else
http://www.jefflewis.net/blog/2010/09/liar_lunatic_or_lord_or_someth.html
- Book Review – More Than a Carpenter
http://www.jefflewis.net/blog/2011/04/book_review_more_than_a_carpen.html
- How Monotheistic Is Christianity?
http://www.jefflewis.net/blog/2010/03/how_monotheistic_is_christiani.html
- What's the Point of Intercessory Prayer?
http://www.jefflewis.net/blog/2009/10/whats_the_point_of_intercessor_1.html

¹ <http://www.jefflewis.net/religion/>

- Standards of Evidence for Religion
http://www.jefflewis.net/blog/2011/03/standards_of_evidence_for_reli.html
- Reasons for Strong Atheism
http://www.jefflewis.net/blog/2009/10/reasons_for_strong_atheism.html

This is the third print edition of the book (the online version has gone through a few more revisions). It's very similar to the second edition, with mostly minor revisions, fixed typos, and additional footnotes.

In preparing the second edition, I tried to keep the book short enough that it's not overwhelming (I have many, many more essays on my website than what's included in this book), but there were a couple essays I'd written since the first edition that I thought filled some holes. The first of those additions is actually a review of the book, *More Than a Carpenter*. It was a nice way to directly address many of the arguments that Christian apologists actually use. The other addition was the essay on *Standards of Evidence for Religion*. And of course, the second edition included its own minor revisions and typo corrections.

A Brief Introduction to Non-Belief

The USA is a very religious nation. Around 85% of the population is religious, in fact, with the vast majority being Christian. That leaves around 15% of us that aren't religious, with a small minority of us being non-believers (atheists and agnostics). Chances are you're one of the Christians. This introduction is for you. There's no way to cover every aspect of non-belief in so small a space, but I hope to answer some of the most common questions and dispel some of the most common myths. I've organized this introduction by presenting the common questions I hear regarding non-belief, each of which is followed by my response.

Why are you mad at God?

Non-believers don't believe in any gods. That may sound obvious enough, but there are a fair number of people that just don't seem to grasp that. A lot of people seem to think that non-believers are angry with God, or that they just don't want to follow His rules. But the reality is that we just don't think that a god exists. How can you be angry with something that you don't think is real?

Why don't you believe?

Most non-believers in the USA were formerly religious, and have since shed their belief. There are many different reasons that can lead one to first begin questioning religion – the inconsistencies & contradictions of the Bible, learning about other current religions, learning about ancient religions that predated one's own, etc. However, the main problem with religion to most non-believers is simply the lack of evidence.

This really is the biggest change in mindset from when I was religious. To many religious people (myself included when I was still Christian), faith is all important. But stop and think about this. In almost all other areas of life, we demand evidence. The more fantastic the claim being made, the stronger the evidence we demand. If your friend said he had eggs for breakfast, you'd probably believe him because that's a pretty mundane claim. But if your friend claimed to have eaten breakfast with the president, you'd probably be a bit more suspicious and demand a bit more evidence than simply taking his word for it. Why should we demand less evidence when it comes to matters of religion? To say that a specific book written a few thousand years ago by a specific culture is the divinely inspired word of an all-powerful being that created the entire universe and everything in it, is certainly an extraordinary claim.

The other problem with faith is knowing how to trust it. You may believe very strongly that you're right, but so do countless Muslims, Jews, Hindus, tribal shamans, etc., even right down to believing that they can feel their gods'

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presences. How can you be so sure that your gut feeling is right and theirs is wrong?

I guess it's important to discuss the standards of evidence here. To some people, seeing the Virgin Mary in a potato chip is evidence of a miracle, but most people would consider such sightings no different than finding shapes in clouds. Unlikely events aren't evidence of the divine, either. After all, your chances of winning the lottery may be one in a million, but someone still manages to win it every week. Likewise, emotional appeals or arguments from consequences are not evidence. For example, you may feel that a life without God would have no meaning (a claim I address on the next page), and this may make you feel uncomfortable. But that's only evidence for how you would feel, not for a god's existence. Reality is what it is no matter how it makes us feel.

I suppose this is the topic that could go on the longest – discussing all the different arguments people use to support their religion, and pointing out all the reasons why non-believers don't find those arguments convincing. Rather, I'll conclude this section of the introduction with the following questions – Looking around at the world, religious affiliation seems to be mostly an accident of birth. So why, out of all the possible religions in the world, do you think you've chosen the correct one? If you imagine that you were born in a different country and brought up to believe in a different god, what reasons would it take to convince your alternate self that your actual religion is true?

Can you prove that God doesn't exist?

It is very, very hard to *prove* that something doesn't exist. It's much easier to demonstrate that something exists. That's why the burden of proof is usually put on people making the claim that something exists, and why you'll hear many non-believers say that it's up to the religious to prove that a god exists.

Look at it this way. Imagine talking to someone who believes in leprechauns. How would you prove to them that leprechauns weren't real? You could point out that there aren't any reliable sightings of leprechauns, but maybe they've heard stories from friends of people who've seen strange things in the woods. You could mention that rainbows don't have ends, so it's silly to think there might be a pot of gold at the end of one, but maybe they'd say that's just an old wives tale that doesn't have anything to do with real leprechauns. They might even bring up how many people have sincerely believed in leprechauns throughout history. The point is, there's no evidence that leprechauns don't exist, just a complete lack of credible evidence that they do exist.

Where did everything come from?

We can study the universe, and our studies so far have revealed a long, rich history going back to the big bang, but that's as far as we can go, and we don't

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know what might have come before the big bang or what might have caused it. We may never know. That's the simple, honest answer.

When I was still a Christian, the question that always bothered me was, 'Why is there something rather than nothing?' The problem was, even God was a something, so saying that God created the universe still didn't answer the Big Question, since there was still the problem of where God came from in the first place. Saying that God just always existed didn't satisfy my curiosity any more than assuming that the universe itself has always existed (which is a possibility if the universe cycles between big bangs and big collapses).

Besides, there are a lot of things we don't understand, but we don't jump to the conclusion that every unanswered question must mean that a particular religion is true. This is what's known as a God of the Gaps Argument, and it doesn't hold up very well over the long run. If you use gaps in current knowledge to justify your belief in a god, then your god will just get smaller and smaller as we learn more and more and fill in the gaps.

What about your soul? What happens when we die?

Technically, atheism and agnosticism only imply doubt about deities, not the soul. Practically speaking, though, the same demand for evidence that leads most non-believers to doubt the existence of a god also leads them to doubt the existence of souls. On top of that, there's all the evidence that shows just how much the physical processes in our brains control our memories and personalities. If there are such things as souls, it makes one wonder just what they actually do.

Speaking for myself, I can say that the idea of ceasing to exist does bother me some, but that also makes life all the more precious, and gives us that much more reason to make the most of it.

On the other hand, as the saying goes (often credited apocryphally to Mark Twain), "I was dead for millions of years before I was born and it never inconvenienced me a bit."

Aren't you afraid you might be wrong?

No more so than you are. If you're Christian, just consider that Muslims think you're wrong and will end up in Hell. If you're Muslim, just consider that Christians think the same thing about you. And there are lots and lots of other religions with their own versions of a hell. Do you stay up at night worrying if you've picked the right religion?

Isn't life meaningless without God?

I hear this quite often, but I'm not sure I understand what people really mean by 'meaning,' or what meaning is added to life if a god did exist. When I was a

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Christian, I knew I was supposed to be good to other people and to worship God, but that was more of a demand than a meaning. Even if I was part of God's plan, that still just made me a pawn, and I doubted that the grand meaning of the universe was simply to be entertainment for a deity.

Maybe I'd explain this better if I went back to the question 'Why is there something rather than nothing?' As I already wrote, hypothesizing God didn't answer that question for me even when I was still a Christian, because a god is still a something. So if I can't answer why there is a god, how does invoking that god do anything to provide an ultimate meaning for the universe?

How can you be a good person without religion?

I could be a smart alec here and ask how you could be a good person *with* religion. If you only do good deeds because you think it might get you the reward of heaven, or you don't do bad deeds because you want to avoid the punishment of hell, then those are pretty selfish reasons and most people wouldn't consider your intentions to be very good. However, I don't think that's really why most religious people behave morally.

Empathy is innate to the vast majority of people. You don't need a holy book to tell you that hurting somebody is wrong, or that the Golden Rule is a good way to live your life. And most people don't actually derive their morals from studying scripture, anyway. For example, many southerners used the Bible to support slavery in the antebellum south. Now, most people rightly consider slavery to be an abomination. Nothing in the Bible has changed. You can still find the same passages that tell you how to treat your slaves, but most people use their own morality to come up with different conclusions than did the slave owners.

Why do you care so much? Why did you bother to write all of this?

Well, the noble reason would be to say that it's for a love of the truth. And honestly, that is part of the reason. The universe is such a grand, wondrous place, that's all the more enjoyable when you view it without a filter. Looking back on when I was a Christian, it was almost like I was experiencing the world through a haze, and I do want to share that clear sightedness with others.

There are more pragmatic reasons, though. Thomas Jefferson once wrote, "it does me no injury for my neighbor to say there are twenty gods or no God. It neither picks my pocket nor breaks my leg." If people kept their religion private, I probably wouldn't be as motivated to write this. However, when people use religion as an excuse to bomb clinics, fly airplanes into buildings, interfere with school curricula, discriminate against homosexuals, treat women as inferior, etc., then I feel obligated to speak out.

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There's also the fact that non-believers are deeply mistrusted in this country. I came to my atheism through honest inquiry. There's nothing dishonest or sinister about my worldview – it's simply the way I think the universe is. I could no sooner *choose* to believe in a god than you could *choose* to believe in fairies. I don't want to live in a society where people question my integrity simply because I believe in one less thing than they do.

Abandoning Christianity – My Reasons and My Journey

I was raised going to a Catholic church. I never quite agreed with all Catholic dogma and traditions, but I definitely considered myself a Christian. I continued my religious practices as I got older. In high school, I read the entire Bible, starting with Genesis all the way through to Revelation. I continued going to mass most Sundays throughout college, and even after college when I'd moved down to Texas on my own to start a new job. It's not that I never had any doubts, but religion gives you a huge incentive to not doubt it, what with the reward of heaven and the punishment of spending eternity in hell. There's also the social stigma that goes along with doubting religion, not to mention the fact that as an impressionable child, you're told all these things as being true by authorities that you generally trust, and you don't want to disappoint those people. So, it took me a while to get past all of that and actually look critically at my religion, including the Bible and Christian religious concepts in general.

Now that I have studied Christianity critically, I've come to the conclusion, to put it bluntly, that Christianity is not true. In this essay, I discuss my reasons for coming to this conclusion, and a bit about my personal journey in abandoning Christianity.

I have two notes before getting started. First, on Biblical verses, unless otherwise noted, all verses are quoted from the New International Version². Second, as an atheist, I obviously doubt much of what's in the Bible. However, rather than use the cumbersome wording of 'supposedly' every time I mention something from the Bible, I'll just refer to it matter of factly, and trust that the reader won't confuse this for an admission of certainty that these supposed events did indeed happen.

Should a Christian Question Their Religion, or What Makes Christianity Special

The first topic I'll address wasn't actually the first issue that made me start to question my religion, but it makes for a good starting point for this essay. And that is, why was I even a Christian to begin with? Out of all the religions in the world, why choose Christianity in particular? A similar way to word this would

² I've since learned that the New International Version is not a particularly good translation, since it was a project of evangelical Christians who let their views influence the translation process, altering the meaning of some passages. The translation I would recommend now is the New Revised Standard Version, or NRSV. More information on Bible translations is available on my website: http://www.jefflewis.net/blog/2012/10/friday_bible_blogging_-_introd.html

be to ask, if I had been born to non-Christian parents in a non-Christian country, and raised to believe in a different religion, is there anything about Christianity that would convince me to convert to it? I realize this is a very open-ended question, but I think it is a very important issue, especially considering that some people think it's heretical to question Christianity at all.

Converting others is an important aspect of Christianity (not only did Jesus tell his followers to, but if you believe that acceptance of Christ is the only way to be saved, and you're also supposed to be good and kind to everybody, it would follow that you should try to convince them to accept Christ so that they can be saved, too). But part of that means expecting people of other religions to question their assumptions and beliefs. If you expect that of other people, why should it not be expected also of Christians?

If you truly believe that Christianity is correct, and you expect people of other religions to be convinced to convert to Christianity, abandoning whatever religion it was they practiced beforehand, then there must be some compelling reasons. There shouldn't be any danger for a Christian to question their religion and study it critically, since that's exactly what's expected of non-Christians. If Christianity is true, and these compelling reasons exist, then critical study should only provide a Christian with further evidence that reinforces their belief.

I think it's important to bring this up as the first topic in this essay, because it points out that when given the choice between two options, one Christian and one non-Christian, no special concessions should have to be made for the Christian argument. One should be able to approach the choice with an open mind, and choose the option that seems more likely – not approach the choice with a preconception that the Christian option is almost surely right, and put a huge burden of proof on the other option, or to go through a huge amount of rationalization to maintain that the Christian option is right. If one needs to approach the choice “with blinders on,” then that argument for Christianity isn't very compelling.

There's one thing I would like to note here about those compelling reasons. I think it's important that they should be more than just faith, or a vague sense of having felt God's presence. How many people in religions besides Christianity have just as strong a faith? How many people in those other religions have had similar spiritual experiences, and were convinced that was evidence of their religion. I've watched documentaries of tribal shamans driving themselves into trance-like states, where they're convinced that they're communicating with their gods³. What makes their experience worth any less than a Christian supposedly sensing the Holy Spirit?

³ <http://en.wikipedia.org/wiki/Shamanism>

Emotional Reasons for Remaining Christian

I've noticed that the arguments that many people use for remaining Christian aren't logical at all, but emotional. In other words, they don't address whether or not God actually exists, but only how the thought of God's existence affects how they feel, which I will discuss below.

Meaning of Life, Where Did Everything Come From⁴

One emotional reason for some people is that they feel God gives their life meaning, and that life would therefore be meaningless without God. To address this, one must first ask what the meaning would be if a god existed. Some would say that our purpose is to worship God, and do as he wishes. That's simply obedience. Those people may go on to say that we're part of God's plan, and we have a meaning in God's plan. That would make our meaning in life the fancy of a deity. For either of those cases, it still raises the question of why God decided on a particular plan or why (as I'll address later) he decided on a particular set of rules. And further, it assumes that following a deity's wishes does indeed provide a profound meaning.

Perhaps another way to look at this is to wonder why there is something rather than nothing. Hypothesizing that a god created the universe doesn't answer the question, because a god is still a something, so there's still the question of where a god came from in the first place. After I'd already come to the decision that I was no longer Christian, I found a short quote from the philosopher Bertrand Russell that summed up this sentiment quite nicely, "It is exactly of the same nature as the Hindu's view, that the world rested upon an elephant and the elephant rested upon a tortoise; and when they said, 'How about the tortoise?' the Indian said, 'Suppose we change the subject.' "

If we say that everything that exists had to have a cause, then it logically follows that deities would also require a cause. If we're willing to make an exception for deities, how do we justify that exception, and why do we not grant that exception to anything else? And remember, we're still not exactly sure what came before the big bang, or if that question even makes any sense. It is possible that the universe is itself infinite, repeating big bangs every few trillion years. It's also possible that there's a universe nursery, creating big bang after big bang in a grand multiverse. To be honest, we just don't know, but

⁴ I've changed this section quite a bit from the way it was originally written – far more so than any other section of this booklet. Remember though, that the main purpose of this booklet is to accurately communicate ideas. I feel that these revisions more clearly express what I was trying to say originally.

introducing a deity into the equation doesn't ultimately solve anything. Even if the deity did exist, it merely shifts the question one step back.

Going back to the original question of this section, if we can't explain where a god came from, why that god exists in the first place, or why that god has the particular properties it does, what meaning does it add to our existence to say that we're supposed to serve that god and follow its wishes?

Accountability for Our Actions

Yet another emotional reason that people seem to have for belief in God is based on morality. There are two aspects to this that I am going to cover in this essay – using Christianity as a basis for morality, and accountability for our actions. I'll cover the former aspect in more detail in a later section, but I'd like to address the accountability aspect here, or more precisely, whether thinking that they're accountable to God actually makes people behave more morally. But first, I suppose we should define "morality."

Let me start by saying that the ideas presented in this paragraph were originally inspired from the essay by the philosopher, Bertrand Russell, *Why I Am Not a Christian*⁵. So although some of this is my own thought, much of this paragraph is simply paraphrasing Russell's idea, and then adding my own examples. The issue is what constitutes a moral action? Are certain acts inherently good or bad, or are they good or bad merely because God says so? If actions are inherently good or bad, then we can determine some standards by which to judge people's actions, and by those same standards, we could also judge God's actions. If morality is determined by divine edict, then the claim that "God is good" really doesn't mean all that much, since God's the one that gets to define "good." "Good" and "bad" would be entirely subjective to the whims of God. To paraphrase a comment I once read on the Internet, God could tell one person to step on a crack, and tell the next person not to, and if they both stepped on the crack, one would be a good person and the other would be bad. (To say that God wouldn't do that, because he's good, is admitting that there is a concept of good and bad outside of God.) Or, to use an example from the Bible, in the 4th chapter of Genesis, God is clearly upset with Cain for him having killed Abel, showing that he disapproves of murder (even though he won't directly issue the commandment against it until Exodus). But when he commands Abraham to sacrifice his only son, Isaac, Abraham is expected to carry out that command, and not question the fact that he was just told to kill an innocent person. The

⁵ I've since learned that this idea is actually much older than Russell, dating back at least to Plato. It is commonly called the *Euthyphro Dilemma*. http://en.wikipedia.org/wiki/Euthyphro_dilemma

fact that God stopped him at the last moment doesn't change the motivations or actions of Abraham – he was ready and willing to kill his son⁶.

So, if you consider good morality to be following every last command of God to the “t,” and you believe in the Christian God, then no, a person can't be moral unless they're a Christian. But let's look at a definition that's a little bit looser. For the sake of this argument, let's define good morality as following the Golden Rule – doing for other people what you'd like them to do for you. Throughout the entire world, there are people that live by this philosophy, Christian and non-Christian alike. There are entire nations where Christianity is either a minority religion, or even practically non-existent, where people would be considered moral under this definition⁷.

There was a study conducted by Gregory S. Paul, titled "Cross-National Correlations of Quantifiable Societal Health with Popular Religiosity and Secularism in the Prosperous Democracies", published in the *Journal of Religion and Society*⁸. It shows the correlation between the number of people in a nation that believe in and worship a creator, versus different problems that that nation faces. To quote the study,

In general, higher rates of belief in and worship of a creator correlate with higher rates of homicide, juvenile and early adult mortality, STD infection rates, teen pregnancy and abortion in the prosperous democracies... The United States is almost always the most dysfunctional of the developing democracies, sometimes spectacularly so, and almost always scores poorly. The view of the U.S. as a 'shining city on the hill' to the rest of the world is falsified when it comes to basic measures of societal health.

Although “a creator” does not necessarily mean the Christian God, so some of the respondents may have been practicing other religions, the surveys were conducted primarily in countries where Christianity was the majority religion. And Christianity is certainly the majority religion in the United States. I know statistics can be taken many different ways, correlation is not causation, and

⁶ One of the first signs I had that I was truly on the road to abandoning Christianity was when this story was the scripture reading one Sunday morning, and I thought to myself – what a good story this would have made if Abraham had refused God's command, demonstrating his love for his son by going up against impossible odds against an omnipotent being.

⁷ http://en.wikipedia.org/wiki/Ethic_of_reciprocity

⁸ Paul, Gregory S. (2005). Cross-National Correlations of Quantifiable Societal Health with Popular Religiosity and Secularism in the Prosperous Democracies. *Journal of Religion & Society* (Vol. 7). Retrieved April 2006, from <http://moses.creighton.edu/JRS/2005/2005-11.html>

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there are certainly many factors contributing to problems in the U.S. But, what I think is important to take away from this study in regards to this discussion, is that the more "Godless" nations are not doing any worse than the religious nations in terms of "societal health," and in fact could actually be considered to be doing better. By this measure, Christianity does not necessarily lead to higher morality, and as demonstrated with the actual evidence of this study, abandoning Christianity certainly doesn't lead to the moral collapse of society.

Remaining Christian to Avoid Hell

One of the biggest emotional reasons, and one which would have the most dire consequences if the God of the Bible existed, is the fear of eternal damnation to hell. This is a very hard reason to argue against logically, since it's instilled into most Christians from the time of early childhood, and because the potential outcome carries such high stakes. This particular emotional obstacle was the hardest for me to overcome, personally. However, looking at it logically, if Christianity is false, then this is an empty threat. Also, Christianity is far from the only religion that requires belief in its deity lest you be punished. Islam, the second most popular, and currently the fastest growing, religion in the world (at least, according to some studies⁹), requires that you follow that particular religion if you don't want to spend eternity in hell, and there are countless other religions with their own versions of hell. So if the threat of eternal damnation is what's inspiring you to remain religious, and considering that other religions carry the same threat, perhaps it would be a good idea to look at the other reasons that you've chosen that religion, so that you can be really sure that you've chosen the right one. (This is commonly referred to as the "avoiding the wrong hell" problem.)

Biblical Contradictions¹⁰

Rejecting the Bible as being divinely inspired was one of the major events leading to my abandonment of Christianity, and internal contradictions within the Bible were one of the major reasons that I rejected the Bible as being divinely inspired.

There are many, many numerical contradictions in the Bible, places where events are mentioned in multiple places in the Bible, and small details like the

⁹ http://en.wikipedia.org/wiki/Claims_to_be_the_fastest_growing_religion

¹⁰ I only discuss a few contradictions in this essay, but there are *many* of them.

Here are a few websites addressing this issue:

<http://ffrf.org/legacy/books/1fif/?t=contra>

http://skepticsannotatedbible.com/contra/by_name.html

<http://bibviz.com/>

age of when a king started his reign, or the number of soldiers in an army, will be different between the different versions. Just to give one example, in the King James Version of the Bible, 1 Kings 4:26 says, “And Solomon had *forty* thousand stalls of horses for his chariots...” while 2 Chronicles 9:25 says, “And Solomon had *four* thousand stalls for horses and chariots...”¹¹ Yes, these are just small differences, probably due to scribes making mistakes during copying or translation, but there are many of them, and it definitely illustrates that not every word in every translation of the Bible is necessarily accurate. And these are the errors that have shown up in surviving manuscripts. None of the original manuscripts still exist, so how can we know which words might have been copied erroneously early on, and propagated to all current versions of the Bible that we have? For a book supposedly inspired by an omnipotent god, any errors should cause one to question the validity of the supposed inspiration.

Moving away from the minor contradictions, there are still numerous contradictions of more importance. These actually affect the meaning of certain passages in non-trivial ways. Obviously, with as many people that have studied the Bible over the centuries, these contradictions haven’t gone unnoticed. People have come up with rationalizations to try to explain them, but some of these rationalizations seem pretty outlandish. In light of the discussion earlier in this essay, I do not think that a person should have to go through such mental gymnastics – if Christianity is true, and especially if the Bible is divinely inspired, the evidence in favor of it should be compelling.

One of the contradictions that seems least ambiguous to me is whether people will be punished for the actions of their parents. Numerous passages deal with this topic, but I’ll just look at two in particular. Exodus 20:5-6 states, “You shall not bow down to them or worship them; for I, the LORD your God, am a jealous God, punishing the children for the sin of the fathers to the third and fourth generation of those who hate me, but showing love to a thousand {generations} of those who love me and keep my commandments.” Compare that to Ezekiel 18:19-20, which states, “Yet you ask, ‘Why does the son not share the guilt of his father?’ Since the son has done what is just and right and has been careful to keep all my decrees, he will surely live. The soul who sins is the one who will die. The son will not share the guilt of the father, nor will the father share the guilt of the son. The righteousness of the righteous man will be credited to him, and the wickedness of the wicked will be charged against him.” I have never seen a good rationalization to reconcile this contradiction.

Moving to the New Testament, another contradiction concerns what is necessary for one’s salvation: actions, faith alone, or some combination? (Other passages

¹¹ Some translations, such as the NIV, rectify this by changing the 1 Kings passage to also read 4,000, and then adding a footnote saying that the original Hebrew reads 40,000. This kind of harmonizing is rather disingenuous.

also mention baptism.) Consider Ephesians 2:8-9, “For it is by grace you have been saved, through faith—and this not from yourselves, it is the gift of God—not by works, so that no one can boast.” Compare this to 2 Thessalonians 1:8, “He will punish those who do not know God and do not *obey* the gospel of our Lord Jesus [emphasis mine].” There are several other such passages that agree with either one of these two.

Morality of the Bible

I briefly discussed morality above, and said that I would return to examining the Bible as a guide to morality. This also covers an argument I’ve heard, that practicing Christianity, even if untrue, would result in being a better person. This section will obviously require, as was done above, that we use a definition of morality outside of, “God commanded it.”

The first area I’ll discuss is slavery. Although this is not a contemporary issue, I think it is a moral issue that most people can agree upon – slavery is bad. To treat another person as property, as opposed to a rational, thinking, feeling being, is just plain wrong. If the Bible were a good guide to morality, one would think that it would condemn this practice, especially considering all the mundane aspects of life for which it does have rules. In fact, during the Civil War, many southerners used Bible verses as a defense for slavery.¹²

Some people have tried to argue that the Bible does not condone slavery, but rather that since slavery was so entrenched in society at that time, the Biblical rules were meant to prevent the mistreatment of slaves. This argument seems very weak to me, as there would be no reason for an omnipotent god to be worried about the social conventions of any particular time. Others have argued that the Bible is not referring to slavery in the same sense as what occurred in recent history in the U.S., but more as indentured servitude (in many versions of the Bible, “slave” has been translated as “servant.”). While it is true that some Hebrews did become indentured servants, there were also true slaves in the modern sense. They were definitely treated differently than free men. There are actually quite a few passages in the Bible that deal with slavery, but I think it will only take a few to illustrate the intentions of the writers.

First, consider the following two passages from Leviticus, the first dealing with how to punish someone for killing “a man,” and the second dealing with how to punish someone for killing a slave. Exodus 21:12 states, “Anyone who strikes a man and kills him shall surely be put to death.” While Exodus 21:20-21 states, “If a man beats his male or female slave with a rod and the slave dies as a direct result, he must be punished, but he is not to be punished if the slave gets up after

¹² http://www.religioustolerance.org/chr_slav.htm

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a day or two, since the slave is his property.” Notice that the Bible only says that a man should be “punished” for killing a slave, not “put to death.” Granted, it could be argued that the implied punishment is death, but consider the latter part of the passage. As long as the beating isn’t so severe that the slave can’t walk after a couple days, then the Bible says that there was nothing wrong with what the person did. (Some translations, such as the King James Version, don’t even mention recovery. They say that the slave must merely survive for a day or two after the beating, after which it would seem okay if the person died.) And finally, notice that the Bible specifically identifies the slave as property.

As I wrote above, there was a distinction in the Bible between Hebrew slaves and foreign slaves. Hebrew slaves were to be released after six years. The following passage gives some rules on how to treat Hebrew slaves:

If you buy a Hebrew servant, he is to serve you for six years. But in the seventh year, he shall go free, without paying anything. If he comes alone, he is to go free alone; but if he has a wife when he comes, she is to go with him. If his master gives him a wife and she bears him sons or daughters, the woman and her children shall belong to her master, and only the man shall go free.

But if the servant declares, 'I love my master and my wife and children and do not want to go free,' then his master must take him before the judges. He shall take him to the door or the doorpost and pierce his ear with an awl. Then he will be his servant for life. (Leviticus 21:2-6)

Notice what type of freedom the “servant” has. If he gets married while serving his master, his wife and children will belong to the master, and will not be permitted to go with the man when he gains his freedom. If he wishes to stay with his family, he must pledge his life to his master, remaining his “servant” for the rest of his life.

There are many other passages of the Bible dealing with slavery, but I think just these few illustrate clearly enough the Biblical position on slavery. Slaves were considered property. It was permissible to treat them differently than free men. A master could beat a slave to within an inch of their life, as long as he didn’t kill them (or according to some translations, as long as they lingered for a few days before dying). And even if he did kill them, the punishment wasn’t as bad as if he had killed a free man. I think this certainly calls into question using the Bible as a basis for morality.

To move on, let’s look at the morality of some of the acts that God has demanded of the Jews. There are numerous cases of genocide in the Bible, where God has commanded his followers to destroy entire cities – men, women, children, and even infants. Consider the following passage:

This is what the LORD Almighty says: 'I will punish the Amalekites for what they did to Israel when they waylaid them as they came up from Egypt. Now go, attack the Amalekites and totally destroy everything that belongs to them. Do not spare them; put to death men and women, children and infants, cattle and sheep, camels and donkeys.' (Exodus 21:5-6)

Next, consider this passage, where God commands the destruction of 60 entire cities:

Next we turned and went up along the road toward Bashan, and Og king of Bashan with his whole army marched out to meet us in battle at Edrei. The LORD said to me, "Do not be afraid of him, for I have handed him over to you with his whole army and his land. Do to him what you did to Sihon king of the Amorites, who reigned in Heshbon."

So the LORD our God also gave into our hands Og king of Bashan and all his army. We struck them down, leaving no survivors. At that time we took all his cities. There was not one of the sixty cities that we did not take from them—the whole region of Argob, Og's kingdom in Bashan. All these cities were fortified with high walls and with gates and bars, and there were also a great many unwallled villages. We completely destroyed them, as we had done with Sihon king of Heshbon, destroying every city—men, women and children. But all the livestock and the plunder from their cities we carried off for ourselves." (Deuteronomy 3:1-7)

And for the last genocide that will be mentioned here (although certainly not the last of the cases in the Bible), consider this passage, which not only advocates mass murder, but also keeping virgin girls so that the men could have their way with them. This is not a direct quote from God, but Moses acting as the leader of the Israelites, telling them what to do. Considering that just a few verses later, God spoke to Moses, and only spoke of dividing the spoils of war, not condemning these actions, it does not appear that God had a problem with what the Israelites did.

'Have you allowed all the women to live?' he asked them. 'They were the ones who followed Balaam's advice and were the means of turning the Israelites away from the LORD in what happened at Peor, so that a plague struck the LORD's people. Now kill all the boys. And kill every woman who has slept with a man, but save for yourselves every girl who has never slept with a man.' (Numbers 31:15-18)

I've used these examples of God commanding massacres, as opposed to ones like the Passover story from Exodus¹³ where God caused the deaths directly, because it could be argued that when God killed all of the first born sons of Egypt, it was through divine intervention, so it's possible that the deaths were quick and painless, even if it still seems cruel by our standards. But that's not what happened in these passages. To put all of these acts into proper perspective, imagine a situation similar to the genocide that occurred in Rwanda in the 1990's. These were murders carried out by soldiers with knives, swords and spears. These were messy, bloody, cruel affairs.

While not on the same scale as the above genocides, consider the following passage where God sent bears to kill 42 youths, for a crime that doesn't appear to be a very bad one. This passage, while not stating it explicitly, certainly seems to suggest that God himself sent those two bears to kill those people.

From there Elisha went up to Bethel. As he was walking along the road, some youths came out of the town and jeered at him. "Go on up, you baldhead!" they said. "Go on up, you baldhead!" He turned around, looked at them and called down a curse on them in the name of the LORD. Then two bears came out of the woods and mauled forty-two of the youths. And he went on to Mount Carmel and from there returned to Samaria. (2 Kings 2:23-25)

And for the final example that I will include in this essay, I ask the reader to consider the entire book of Job. To win a wager with Satan, God allowed Satan to torment Job. First Satan took away all of Job's possessions, then he afflicted him with sores from head to foot, that made him suffer so much that he wished his life would end. But Job remained faithful to God the entire time. In the end, God finally did give everything back to Job, but one must certainly question the reason for the whole ordeal in first place. (To the people who like to say that God always answers every prayer, and sometimes the answer is "no," or that everything has a purpose that is a part of God's plan, you could add that sometimes the plan is just that God wants to win a bet.)

Purpose of Jesus' Death & Resurrection, Animal Sacrifice

Before I started to question Christianity, the purpose of Jesus seemed clear: "God so loved the world that He gave His one and only Son, that whoever

¹³ Although it should be noted that other parts of the Exodus story certainly paint God in a bad light, such as the earlier plagues that indiscriminately caused suffering among all Egyptians, even their slaves. It's also the case that Pharaoh was ready and willing to let the Hebrews leave on multiple occasions, but God himself hardened the Pharaoh's heart to prolong all this suffering.

believes in Him shall not perish, but have eternal life.” (John 3:16 NIV) There is still some debate among Christians as to whether people are saved through faith alone, or also through actions, but the majority view seems to be that acceptance of Christ is certainly one of the requirements.

However, having admitted to myself that I doubt Christianity, the entire logic of Christ dying for our salvation just doesn't seem to make sense. What is the point of an all-powerful God sending his son to be crucified, and then being resurrected and ascending into heaven? How does this crucifixion forgive humanity of all of their sins? Why was it necessary? I can understand the symbolic meaning of God (or at least part of God) becoming human to show that he shares in our suffering, and I can even understand Jesus being an example as to how to live our lives (even if I personally don't agree with all of the moral teachings¹⁴), but I just do not understand the necessity of the crucifixion and resurrection, and how this act has forgiven humanity of their sins.

Some people talk of Christ's death as the ultimate sacrifice. The role of sacrifice in the Bible had always given me an unsettling feeling when I was a Christian – why would an all-powerful god be concerned with blood sacrifice? I understand the symbolism of sacrifice – to show your devotion to God by giving up something precious to you, and the Bible does talk of non-animal sacrifices, such as grain, that by themselves would go along with that concept. But there are other passages which deal with the actual killing of animals, and in particular blood, that seem to indicate that it's more than just this symbolic gesture that makes a sacrifice important. Consider the story of Cain and Abel.

Now Abel kept flocks, and Cain worked the soil. In the course of time Cain brought some of the fruits of the soil as an offering to the LORD. But Abel brought fat portions from some of the firstborn of his flock. The LORD looked with favor on Abel and his offering, but on Cain and his offering he did not look with favor. (Genesis 4:2-5)

This story definitely seems to indicate that it was animal sacrifice that God preferred. Other sections of the Bible are even more explicit. I won't go into an exhaustive discussion for the evidence of this, but I will list a few passages of the Bible that confirm that it was actually animal sacrifice and blood that God was after, and not just symbolically giving up something precious.

¹⁴ And while I'm at it, why were commandments okay for the first few thousand years, but then apparently a few thousand years later, God had to set an example for us?

- “For the life of a creature is in the blood, and I have given it to you to make atonement for yourselves on the altar; it is the blood that makes atonement for one's life.” (Leviticus 17:11)
- “If the anointed priest sins, bringing guilt on the people, he must bring to the LORD a young bull without defect as a sin offering for the sin he has committed. He is to present the bull at the entrance to the Tent of Meeting before the LORD. He is to lay his hand on its head and slaughter it before the LORD. Then the anointed priest shall take some of the bull's blood and carry it into the Tent of Meeting. He is to dip his finger into the blood and sprinkle some of it seven times before the LORD, in front of the curtain of the sanctuary. The priest shall then put some of the blood on the horns of the altar of fragrant incense that is before the LORD in the Tent of Meeting. The rest of the bull's blood he shall pour out at the base of the altar of burnt offering at the entrance to the Tent of Meeting. He shall remove all the fat from the bull of the sin offering—the fat that covers the inner parts or is connected to them, both kidneys with the fat on them near the loins, and the covering of the liver, which he will remove with the kidneys—just as the fat is removed from the ox sacrificed as a fellowship offering. Then the priest shall burn them on the altar of burnt offering. But the hide of the bull and all its flesh, as well as the head and legs, the inner parts and offal— that is, all the rest of the bull—he must take outside the camp to a place ceremonially clean, where the ashes are thrown, and burn it in a wood fire on the ash heap.” (Leviticus 4:3-12)
- “Then Noah built an altar to the LORD and, taking some of all the clean animals and clean birds, he sacrificed burnt offerings on it. The LORD smelled the pleasing aroma and said in his heart: ‘Never again will I curse the ground because of man, even though every inclination of his heart is evil from childhood. And never again will I destroy all living creatures, as I have done.’ ” (Genesis 8:20-21)

These are far from the only passages in the Bible that deal with animal sacrifice, but I think they show quite clearly that the Bible presents a God desiring animal sacrifices. The passage from Leviticus is much ado about nothing if the sacrifice was merely a symbolic gesture (and many passages from Leviticus are just as detailed in how to perform these animal sacrifices). And the passage about Noah (and several other passages in Leviticus and Numbers) makes it clear that God finds the smell of burnt sacrifices to be pleasing.

One must wonder, what is it about animal sacrifice that would be so pleasing to an all-powerful god? He has the power to do anything he wants, so there can't be anything about a mystical power of blood. And he's omniscient, so he knows what's in people's hearts, whether they're truly sorry for their sins, or truly grateful for what he's provided, so it would seem like a sacrifice is superfluous.

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So why the demand for blood? It seems to me that this sacrifice is a relic from a more primitive tradition from which Judaism evolved.

So, if people are going to argue that Jesus' crucifixion was some type of perfect sacrifice, this seems to indicate that God did indeed want animal sacrifices. But because they were merely animals, their blood wasn't good enough. What was truly needed to forgive the sins of all of humanity was the blood of God incarnate. I don't think many Christians actually feel this way, but from the way sacrifice is presented in the Old Testament, I don't think it's very easy to argue for Jesus' death being merely a symbolic sacrifice. No matter what way you look at it, I still fail to see the logic behind Christ's death being a necessity for humanity's forgiveness, and I fail to see why God would demand animal sacrifices in the first place.

Science, Evolution, & the Age of the Universe

I want to briefly touch on the topics of evolution, and the age of the earth and the universe. First, let me note that acceptance of the scientific consensus on these issues does not necessarily, or even usually, lead to the rejection of Christianity. Many, many people have found ways to reconcile this scientific knowledge with their religion. I had found ways to rationalize this knowledge with the stories of Genesis, so these issues in and of themselves would not have lead me to abandon Christianity had I not studied some of the other issues that are noted in this essay. However, these discrepancies did sow the first seeds of doubt in my mind, and are issues that many Christians, particularly fundamentalists, seem to have a problem with, so I will address them briefly. And the way I will address them is to give a very brief description of how science works.

Science is a method to answer questions about our universe. Based on the evidence that you have, you come up with a way to explain it. Then, you figure out ways to test if your explanation is right or wrong. If the new evidence fits with your explanation, you figure out new ways to further test your idea. If the evidence doesn't fit, then you work on coming up with a new explanation. (I'd like to avoid semantics, since these words carry different meanings in science than in everyday language, and their distinctions in science are more shades of grey that haven't been totally agreed upon, as opposed to absolutes that can be rigidly defined, but to put it in terms that people will recognize from their grade school science classes, when you first come up with your explanation before you've done any testing, it's referred to as a hypothesis, and then once your explanation has a little more to back it up, it's referred to as a theory or a law. Laws tend to be more focused ideas that can be expressed with a single equation or sentence – think of Newton's 3 laws of motion. Theories tend to be more overarching frameworks that incorporate many ideas and laws, such as

aerodynamic theory. However, different laws and theories have different levels of confidence. That’s why, for example, referring to the “Theory of Evolution” isn’t implying any doubt that evolution occurs, while “String Theory” is still hotly contested.)

So, while the scientific method never gives absolute certainty about anything, what is done is to build evidence to increase your confidence about an explanation. And even after you have a fair level of confidence in your explanation, it’s always possible that some new evidence may come along that forces you to rethink that explanation. That’s not a shortcoming – it’s keeping an open mind. And in your course of finding all this evidence, you may be presented with new questions that need their own explanations.

A very good example, that isn’t controversial so nobody should have a problem considering this, is atomic theory. Let’s look specifically at the electron. Three hundred years ago, nobody even had a concept that electrons existed. Throughout the 1800’s, electrical charges and some of the fundamentals of nuclear physics were beginning to be understood. In 1897, J.J. Thompson performed his famous experiments that gave us much more knowledge of the nature of the electron. Later, Niels Bohr gave us the "solar system" model of an atom, which said that electrons orbit the nucleus, like tiny planets orbiting a sun. The solar system model has since been shown to be too simplistic, and has been replaced by electrons having probability valences instead of fixed orbits. Additionally, new subatomic particles have been theorized and discovered that are even smaller than electrons. But, even though the solar system model wasn’t exactly correct, it was still more accurate than simply thinking of material as a solid lump (also known as the plum pudding model), and the valence theory that replaced it didn’t call into question the existence of electrons. So you can see how this scientific process has brought us closer to the truth of what an electron is, being revised along the way, while at the same time opening up questions about even smaller particles.

Some people argue that despite any evidence, since nobody has directly observed things such as the early history of the earth, we can’t be positive about what has happened. A common tactic these people use when dealing with someone talking about evolution is to ask them, “Were you there?” (Answers in Genesis is one such organization that uses this tactic.¹⁵) A good analogy that shows how we can have confidence in something without observing it directly is court trials. When a case goes to trial, neither the judge nor the jury were ever at the scene of the crime. They must make their decision based on the evidence presented to them by the lawyers. And they are able to make their decisions “without any reasonable doubt,” based on the evidence alone. They certainly

¹⁵ <http://www.answersingenesis.org/articles/am/v1/n2/taking-back-temples> or http://en.wikipedia.org/wiki/Ken_Ham

have enough confidence in their evidence based decisions to send people to jail for life, and in some cases to even sentence people to death.

I've spent a little more space on this than I'd intended writing about science, but like I said, evolution and the age of the universe sowed those original seeds of doubt in my mind, so I think it's important to show why I can be so confident in those concepts. I will not use this essay to go into detail on the evidence for those concepts, but I will say that there is enough evidence that these things can be accepted beyond a reasonable doubt¹⁶. If it were a court trial, there would definitely be a conviction. As far as evolution, while all of the exact lineages may not be known, and our understanding of the exact mechanisms driving evolution may still be incomplete (i.e. punctuated equilibrium, gradualism, & genetic drift, just to name a few), there really is no serious doubt that evolution has occurred, is occurring, and will continue to occur, and that evolution explains how all of the life on this planet, including humans, is descended from common ancestors that were alive billions of years ago. Similarly, the ages of the Earth and the universe may not be known exactly, but we can say with a very high degree of confidence that the Earth is around 4 ½ billion years old, and with slightly less confidence that the Big Bang occurred somewhere around 13 billion years ago.

There are two final, related points about science vs. religion that I would like to address in this essay. Some people seem to believe that certain scientific theories, like evolution, or the Big Bang, were invented so that scientists could have an explanation for these things that didn't include God. That's not the case. It's impossible to speak for the intentions of every individual scientist, but in general, scientific theories are invented as the best possible explanation for the evidence, period. And no matter what the intentions of the original person to propose the theory, the theory itself is accepted or rejected in the scientific community based on the evidence. In fact, prior to the theory of evolution, creationism *was* the dominant scientific theory for how life came to be on this planet, and it was the evidence that swayed most scientists to accept the theory of evolution.

The related point that I'd like to discuss is how some people feel that science and religion are in conflict. There may be something to this, but it's not because scientists are intentionally trying to disprove religion, or because there necessarily needs to be a conflict between the two. Suppose your religion said that lightning bolts are the sparks created when Thor strikes his hammer against an anvil, while science says that lightning bolts are the result of static electricity

¹⁶ For readers interested in evolution, I'd recommend Jerry Coyne's *Why Evolution Is True* as the best introduction to the evidence that I've seen, with Donald Prothero's *Evolution: What the Fossils Say and Why It Matters* being a close second.

in clouds. In that case, there would indeed be a conflict between the scientific explanation and your religious one. Similarly, if your interpretation of Christianity says that the entire universe was created in six days a few thousand years ago, this is certainly at odds with what the scientific evidence tells us. But it was not because scientists approached these issues trying to disprove Norse mythology or Christianity. Any conflicts that do exist between scientific explanations and religious ones are not because of an intentional attempt at disproving religion, but usually because the religious explanations don't fit the evidence. And like I wrote above, many people have found ways to reconcile these conflicts by interpreting their religion in different ways, such as figurative or allegorical interpretations of the Bible (like I had myself), so science does not necessarily lead to the rejection of religion.

Questions About the World Around Us

I wrote above that science and religion do not necessarily conflict, but in many instances, science has taken on the role of answering questions for which people used to turn to religion. People have a desire to understand why things happen. Whether this is because we're a social animal, and need to understand the actions of the people around us, or because we're a technological animal, and need to understand the consequences of our interactions with the environment, or because of some combination of the two, or because of some other reason altogether, I don't know. But the fact remains that we have a deep desire to understand the cause and effect of the things we see happening around us. In the absence of scientific knowledge, many peoples in the past (and even still in the present) have turned to religious explanations. This is obvious in tribal superstitions and religions like Greek mythology, but I think it applies to many of the stories from the Bible, as well. In fact, when I was still a Christian, I found many of these stories unsettling because of their likeness to "just-so" fables. Let's take a look at just a handful of these questions, and compare the answers that science gives us, to the answers that one might get from a literal reading of the Bible.

- *What causes rainbows?*
Science - It's caused by diffraction of light rays as they pass through water droplets.
Bible – They're a sign of the promise God made to Noah that he would never again cause a global flood (Genesis 9:8-17).
- *Where did people come from?*
Science – Through evolution, over countless generations, due to slight differences between each generation, life has branched from a common ancestor into all the forms we see today, including humans.

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We are just one branch on this great tree of life, distant cousins of every living organism on Earth.

Bible – On the sixth day of creation, God made us in his image, as a special creation to rule over all the earth (Genesis 1:26). (The actual wording used when God expresses his wish to create man is, “Let us make man in *our* image, in *our* likeness...” I wonder who he was talking to when he said “our.” Apologists will say it was the trinity, or possibly angels, but it seems more likely that it came from a pre-Jewish creation myth that included multiple gods, especially since God doesn’t refer to himself as “our” in other portions of the Bible.)

- *Why are there so many languages?*

Science – Because language changes slowly over time (compare the English of Shakespeare to the English of Mark Twain to the English of today), as groups of people spread across the Earth and became separated, the accumulation of these slight changes over the generations in the isolated populations eventually gave us all the languages we have today.

Bible – God created all those different languages at the same time he destroyed the Tower of Babel, so that man would never again be able to organize to build such a tall structure (Genesis 11). (The Tower of Babel story also raises the question of why God would be upset by a tall building.)

- *Why do we get sick?*

Science – Most diseases are caused by various germs – bacteria, viruses, or fungi. Others are caused by poisons, while yet others are caused by malfunctions of our own bodies (like cancer).

Bible – People get sick because they’re possessed by evil spirits. This is especially evident from the multitude of passages in the New Testament where Jesus or his followers cure people by exorcising the evil spirits (There are too many passages dealing with this to list them all, but Matthew 8:31 is a good example, which also shows cruelty to animals).

- *Why don’t snakes have any legs?*

Science – Through evolution, subsequent generations from an ancestral reptile gradually grew smaller and smaller legs to adapt to their environment (possibly an aquatic or subterranean habitat), until eventually their legs disappeared altogether (almost- some snakes still have vestigial hind limbs).

Bible – Because the serpent tricked Eve into eating the apple, God cursed the snake to crawl on its belly and eat dust for the rest of its life (Genesis 3:14).

Can science answer everything? No. There are still areas that aren’t completely understood in science, and certain questions to which science may never have an answer. But just because science can’t tell me what’s going to happen to me

after I die, that's not a compelling reason to accept Christianity over any other religion, or even to accept any particular religion at all, for that matter.

Christianity in the Context of an Ancient Universe

One of the problems I've always had with Christianity is looking at it in the context of the age of the universe. Consider that the universe is around 13 billion years old (at least – the Big Bang may not have been the actual start of the universe, but rather a singularity, before which we can't determine anything about how things existed), the Earth is 4 ½ billion years old, and modern humans have been around for at least 100,000 years, possibly almost twice that, not to mention the precursor hominid species that were our ancestors. Why did God wait until around 6,000 years ago to reveal himself? And why was this revelation to a small herding society in the Middle East? And then why, after waiting 12 billion, 999 million, and 994 thousand years after the initial creation to reveal himself (or even 94,000 years after humans first appeared), was he so quick to make a new covenant just a few thousand years later? I realize that this isn't exactly a fool-proof logical argument, since a god could have whatever reasons it wanted for doing the things it did, but it's still troubling, none the less. And this argument can be applied to many religions besides Christianity – why have so many of them started within the past few thousand years, when the universe is so ancient, and humans have been around for so long.

Inventing a Role for God / Human Arrogance

Christianity tells us that humanity was God's ultimate goal for the universe, but once you get past the initial creation of the universe, science does give us a pretty good idea of how we came to be. From the initial expansion of the Big Bang, to the formation of the solar system, to abiogenesis, to evolution, science can help us understand where we came from. Since science can explain the mechanisms of how we came to be, that calls into question God's role in the history of the universe, and puts him in the position of either front-loading the universe at the instant of the Big Bang (so that all of the atomic/chemical/physical reactions from that point on would result in humanity), or tinkering almost imperceptibly with the universe throughout history to guarantee the evolution of humanity. In other words, once the Big Bang occurred, God wasn't really necessary for the evolution of humans (and as stated above, there's really no logical reason to require God for the Big Bang, either), but to accept the science and still accept Christianity (like I did), actually requires the invention of mechanisms to allow for God, such as the two discussed above. Looking at this now as a non-Christian, this whole concept seems to be horribly conceited – to believe that the entire universe, in its almost

unimaginable vastness and with its nearly incomprehensible age, should exist solely for the benefit of humanity.

Christianity in the Context of Prior Religions

Other than the conflict between science and a literal interpretation of the Bible, another big early influence that made me begin to question Christianity was studying religions that predated it. I will briefly discuss a few examples here.

Noah's ark is one of the more famous stories from the Bible. It seems very likely, however, that the story is an adaptation of earlier stories, such as the well known Epic of Gilgamesh, and the earlier epic of Atrahasis, which is the earliest known version of the Mesopotamian flood-myth. These stories include the primary god becoming upset with humans and creating a flood to kill them all. Somehow, one man gets warning of the impending flood, and builds a ship before it comes. He takes his family and animals on the ship, and survives the flood which lasts for seven days in most of the myths, and 40 days in the Biblical version. Although there are differences between the various flood myths, there are clearly striking similarities, as well.

Many aspects of Jesus' life can also be seen in earlier religions. The concept of a God-man, born of a human mother with a divine father, is certainly not unique to Christianity. Hercules is one of the more famous in popular culture. But there were others to which Jesus showed more similarities, including Osiris and Mithras, who were also supposed to have died and been reborn. In fact, so many religions include gods that were resurrected, that some people even use the term "life-death-rebirth deity" to describe these gods (although others argue that this term is too "Christian-centric," since the resurrection aspect isn't as important to other mythologies)¹⁷. Osiris supposedly even had a Eucharist sacrament associated with him.

I would like to discuss Osiris a little more, since for me personally, learning about him planted one of the larger seeds of doubt when I was Christian. In the introduction to his translation of the Egyptian Book of the Dead, (starting on page li) E.A. Wallis Budge wrote,

This is the story of the sufferings and death of Osiris as told by Plutarch. Osiris was the god through whose suffering and death the Egyptians hoped that his body might rise again in some transformed or glorified shape, and to him who had conquered death and had become the king of the other world the Egyptian appealed in prayer for eternal life through his victory and power. In every funeral inscription known

¹⁷ http://en.wikipedia.org/wiki/Life-death-rebirth_deity

to us, from the pyramid texts down to the roughly-written prayers upon coffins of the Roman period, what is done for Osiris is done also for the deceased, the state and condition of Osiris are the state and condition of the deceased; in a word, the deceased is identified with Osiris. If Osiris liveth for ever, the deceased will live for ever; if Osiris dieth, then will the deceased perish.

Later in the XVIIIth, or early in the XIXth dynasty, we find Osiris called ‘the king of eternity, the lord of everlastingness, who traverseth millions of years in the duration of his life, the firstborn son of the womb of Nut, begotten of Seb, the prince of gods and men, the god of gods, the king of kings, the lord of lords, the prince of princes, the governor of the world, from the womb of Nut, whose existence is everlasting, Unnefer of many forms and of many attributes, Tmu in Annu, the lord of Akert, the only one, the lord of the land on each side of the celestial Nile.’

The first paragraph above shows the similarity in roles of Osiris and Jesus – that through their resurrection humans can attain eternal life. The second paragraph shows the similarity in how they are addressed in literature (although it’s conceivable how these lofty praises could be addressed to any powerful figure). Seeing some of the important traits of Jesus in a mythical figure that predates him certainly calls into question the source of those concepts in Christianity¹⁸.

One note I will make on this, in case the reader wants to investigate this topic further, is that in my experience researching topics that cast doubt on Christianity, this area especially required extra care in doing research. It seems that many people, in an attempt to deny the basis of Christianity, are a little too eager to accept claims of previous gods sharing characteristics with Jesus. One must be careful to get information from a reputable source, and verify it from other reputable sources (this is good advice for information in general, but I think especially applicable to this subject). There are many websites which even have bulleted lists detailing the similarities between Christ and other gods, which would seem to indicate that Jesus was practically identical to these earlier gods. My experience in further research to the claims on these bulleted list type sites is that many of the claims are rather tenuous. There are still many similarities, and it seems that Judaism and Christianity did evolve from earlier religions, but the case is a little more complex than simple bulleted lists can do justice to, and not nearly as cut and dried as many of these lists would have it seem.

¹⁸ A related topic is the historicity of Jesus, or in other words, whether there’s even a real person that the mythology is based on. This topic is discussed a bit in the essay, *Book Review – More Than a Carpenter*.

When I Finally Rejected Christianity

After a long period of reflection, I really had no logical reason to continue believing in God, no philosophical reason to require the existence of a god, and actually had several reasons to doubt the God of the Bible. It still took me a little while to get past the emotional aspect of it, particularly the fear of hell and the sense of disrespecting my parents, grandparents, and great grandparents, but I finally just had to admit to myself, that the God of the Bible was an invention of people.

When I finally did admit this to myself, it came with a great sense of relief, while at the same time a great burden of responsibility. On the one hand, I no longer had to worry about all the numerous, and sometimes seemingly arbitrary, rules of the Bible. I could do yardwork on Sundays without fear of dishonoring the Sabbath; I could accept scientific theories on evolution and the origins of the universe without compromise; I could eat whatever food I felt like; I didn't have to worry about my non-Christian friends going to hell; I no longer had to feel guilty about insisting on equal rights for gay people. But on the other hand, with no God, it means there's no one watching out for us, and no promise of a perfect afterlife. For all of the people on this planet that are living in horrible conditions, there's no God that's going to make their lives better, or give them a reward in Heaven after they die. The only way that their condition is going to improve is if those of us with the means do something to help them. So, now that I've rejected Christianity, I feel a *greater* responsibility to help my fellow humans, since that's the only help they're going to get.

Once I admitted to myself that Christianity was a human invention, it was like a flood gate breaking open. It gave me a whole new perspective on life, and an outsider's view on Christianity. I could see, almost with new eyes, all the logical compromises I had been making to myself to accept Christianity. For one thing, I could look at the Bible objectively, without the preconception that everything in it must be true, and see how it was written by a primitive people without much knowledge of the way the universe actually worked. Genesis made sense. I could now enjoy Biblical stories on the same level that people enjoy other mythology.

One emotional response that I had to be careful not to have was a sense of smugness. Reading what some ex-Christians & non-Christians have written on the Internet, there seems to be a sense, at least as far as religion & logical thinking are concerned, that they believe they are somehow better than Christians, that the evidence is all right there and so clear, that it should be obvious to everybody that Christianity isn't true. Having gone through the process myself, I can say that it's very difficult to abandon a religious belief into which you've been indoctrinated your whole life, especially when virtually the entire society that surrounds you holds to those beliefs. And I believe that most

Christians, despite being misled, are still good people, who are sincerely trying to live their lives in what they believe to be the most moral manner.

Why I'm Not Going to Search for Another Religion

When I first started to really doubt Christianity, I wondered if perhaps I should try to find another religion. Christianity may have been wrong, but maybe one of the others was right. I did look into other religions a little bit. From a superficial study of the world's major religions, I had one problem with all of them, even if it wasn't a logically thorough reason – with the age of all of the world's major religions, why has the world population not come to some type of consensus in all this time? If the arguments in favor of any of those religions were truly convincing, it would seem that these religions would have had more converts. The fact that most religions are perpetuated by indoctrinating children into following the religion of their parents is not a strong argument in favor of any of them.

There are many ways one could classify religions, but for the purposes of the discussion in this paragraph, I'll divide religions into two very general groups – theistic and non-theistic. Theistic basically means that the followers believe in some type of super-powerful god in the universe (like Christianity, Islam, or Zoroastrianism). Followers of non-theistic religions do not believe in this type of divine being (like Buddhism – at least in principle). For the non-theistic religions, the stakes don't seem nearly as high. They may be right, or they may be wrong, but I'm not going to be punished by a vengeful God for all eternity if I don't believe in them. For theistic religions, recall the argument I raised above about religion in the context of an ancient universe – if humans have been around for at least 100,000 years, why are all of the major religions so young? While this is a problem for all religions, it is especially puzzling for the theistic ones – why would a god demanding worship wait so long to reveal itself?

I have another, more practical reason, for not searching for another religion. It's actually summed up quite well in one of the teachings of the Buddha:

If anyone should say thus: 'I will not lead the holy life under the Blessed One until the Blessed One declares to me "the world is eternal"... or "after death a Tathagata neither exists nor does not exist,"' that would still remain undeclared by the Tathagata and meanwhile that person would die. Suppose, Malunkyaputta, a man were wounded by an arrow thickly smeared with poison, and his friends and companions, his kinsmen and relatives, brought a surgeon to treat him. The man would say: 'I will not let the surgeon pull out this arrow until I know whether the man who wounded me was a noble or a brahmin or a merchant or a worker.' And he would say: 'I will not let the surgeon

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pull out this arrow until I know the name and clan of the man who wounded me;...until I know whether the man who wounded me was tall or short or of middle height;...until I know whether the man who wounded me was dark or brown or golden-skinned;...until I know whether the man who wounded me lives in such a village or town or city;...until I know whether the bow that wounded me was a long bow or a crossbow;...until I know whether the bowstring that wounded me was fiber or reed or sinew or hemp or bark;...until I know whether the shaft that wounded me was wild or cultivated;...until I know with what kind of sinew the shaft that wounded me was bound - whether of an ox or a buffalo or a lion or a monkey;...until I know what kind of arrow it was that wounded me - whether it was hoof-tipped or curved or barbed or calf-toothed or oleander.'

All this would still not be known to that man and meanwhile he would die. So too, Malunkyaputta, if anyone should say thus: 'I will not lead the holy life under the Blessed One until the Blessed One declares to me: "The world is eternal"...or "after death a Tathagata neither exists nor does not exist," that would still remain undeclared by the Tathagata and meanwhile that person would die. (The Middle Length Discourses of the Buddha, pp. 534-535)

There is too much to life to spend all of my time worrying about religion. I think this is especially true if there is no vengeful god running the universe, such as those specified in Christianity, Islam, or countless others. I can try to live my life in what I think is the most moral way, spending my time helping people, instead of wasting my time fretting over ancient teachings, or worrying about philosophical questions that aren't really going to change my life too much one way or the other. I will still continue to study various religions, both to understand the motivations behind the actions of their followers, and because I think that some of the philosophies and moral lessons are good ones that I can apply to my life. But I'm certainly not going to blindly accept any of those teachings without careful thought, and I'm no longer going to worry about which one of those religions might be the one, true religion to which I should be devoting my life.

Where I Stand Now

To clarify my position on religious matters at the time of writing this essay¹⁹, I'm not absolutely one-hundred percent certain about anything. However, I'm

¹⁹ My position as summarized in this section reflects my feelings when this essay was originally written. In the years since, as I've become more comfortable with the idea that there aren't any gods, I've shifted toward

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about as sure that the Earth is a globe that orbits the Sun as I am that the Bible was written by people, and that a God as presented in the Bible doesn't exist. I'm not as certain that no type of divine being exists at all. I don't see an absolute reason why there would have to be one, but that doesn't mean that there isn't one, or that a super powerful being didn't come into existence after the universe did. I'm also open to the idea that we have souls and will experience some type of afterlife. So, I may not buy into the arguments of Christianity, anymore, but I haven't rejected a spiritual aspect of the universe, altogether.

I still do have periods where I question if I've made the correct decision, or have a certain nostalgia for the comfort I used to get from religion. When I was Christian, at least up until shortly before I became an atheist, I was *positive* that I was right about the nature of the universe – that God existed and that Christianity was true. Now, I'm pretty darn sure that I'm right in thinking that there isn't a god, but I don't have that same conviction. I look back to the time when I was Christian, and knowing how I was so positive then but now think I was probably wrong, I have to admit to myself that there's a possibility I'm wrong now, too. For another, I live in a society where I'm practically surrounded by Christians, and I sometimes wonder how I can be so sure I'm right when so many people disagree with me. I realize that public opinion doesn't define reality – just look how many people used to believe the Earth was the center of the universe – but it still makes me question myself from time to time.

However, every time I begin to wonder if I have made the right decision, I go back to the point I made at the beginning of this essay – why Christianity? There are so many religions in the world, and so many that have existed throughout history, why choose Christianity as the one, true religion. Until I see some actual compelling reasons for any of the religions, I'll go on accepting atheism as the most likely view of reality.

Closing Remarks

This essay is far from exhaustive. There are many other reasons that lead me to reject Christianity, and many, many more specific examples for the reasons I did discuss, but at least this essay covers the major reasons and the thought process that lead me to first question Christianity, then go through the research, and finally to make the decision that I did. I hope that this gives the reader a good understanding of why I've abandoned Christianity, and that it might provide a good starting point should the reader wish to research this subject any further.

strong atheism – that gods really are pretty unlikely. I've also come to strongly doubt the existence of souls.

Musings on the Existence of the Soul

Here are a few e-mails a few of my friends and I exchanged regarding the nature/existence of the soul. The first message is mine, explaining my position to a friend of mine, following a few brief remarks made the night before at too late of an hour to expand upon. The two other messages are responses from two of my friends. I did have rebuttals to their arguments, but those were exchanged during conversations we had, and it wouldn't be fair to them to put my responses here in writing without also giving them a chance to respond. Additionally, my own personal views on this are fairly different now than they were when this correspondence originally took place, so even I wouldn't agree with my former self's responses. The next essay in this collection more closely reflects my current thoughts, but I'm still keeping this exchange because it reflects the evolution of my thoughts on the subject, which is one of the goals of this collection, and because it still does raise some interesting points.

On 7 January, 2002, Jeff wrote:

Roy,

... I don't really have proof as to the existence of a soul, but rather logical reasoning which I think strongly suggests that existence. It stems from the fact that we actually perceive our lives. Not "I think, therefore I am" but rather "I experience thinking, therefore I am". When you look at our bodies, they're just a bunch of chemicals. They're arranged in a very complex way, but they're still just atoms. Nothing that we know about atoms suggests that they have any self awareness. No matter how complex the arrangements, they still don't know that they exist. With enough knowledge, it would be possible to arrange atoms in such a way as to have very complex reactions to certain inputs. That is basically what the human body is, as well as other animals, organisms, complex machines, and computers. So you can have all these atoms put together, reacting in very complex ways to inputs, creating a system that behaves like we do, even to the point where it says, "I think, therefore I am." But there is no real self awareness. It is just a complex system designed to say and do those things. The part that provides the self awareness is the soul.

There are two related alternate theories I can think of that would negate this argument. These come from my assumption that atoms have no self awareness. Perhaps they do. Perhaps our bodies are just a sum of the self awareness of the individual pieces of matter we are composed of. Or, perhaps there's something equivalent to critical mass. Once a system becomes complex enough, it has self awareness. Following the analogy to critical mass, since there are still nuclear reactions before critical mass, it is only once you get to that mass that it sets up a

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chain reaction, perhaps then, critical complexity must be reached before a system becomes self aware. One interesting aspect of these theories relates to the fact that we're constantly gaining and losing atoms. Perhaps, not just in a sense of matter, but also of the soul, we're different people now than we were a year ago.

Another possibility is that when a system becomes complex enough, it attains self awareness, even though no smaller unit has any self awareness. However, I find this theory the least likely, as nature tends not to behave in thresholds, but rather varying levels of a certain quantity depending on the circumstances.

Anyway, the possibilities I see, in increasing order of what I consider likely, is that a system attains self awareness once it is complex enough; everything has some degree of self awareness, and the bigger or more complex the system, the more self awareness it has, possibly with some critical complexity; or that we have souls in the classical sense, one (or a limited number) of souls per being. This theory does nothing to explain where the souls come from, whether they just flash into existence from nothing (not very likely), have always been in existence and for some reason or another take residence in a certain being, or are created by some higher being(s) and put into a physical body.

Let me know what you think about this, if you see any holes or have any other thoughts. I'm sure I'll talk to you later about it. Anyway, I'm in the office right now, and they're paying me to do engineering, not philosophy, so I probably ought to get back to work.

Talk to you later,
Fatboy²⁰

On 7 January, 2002, Roy wrote:

Fatboy.

I read your explanation and it is most insightful. I'll try to play devil's advocate - it's not that I totally disagree with your reasoning (I'm very inclined to believe it!), I just want to respond. You write:

"When you look at our bodies, they're just a bunch of chemicals. They're arranged in a very complex way, but they're still just atoms. Nothing that we know about atoms suggests that they have any self awareness. No matter how complex the arrangements, they still don't know that they exist."

²⁰ Yes, 'Fatboy' was my nickname throughout high school and college, even though I was in really good shape when I first got the nickname.

Are you sure? Don't you need to show that no matter how complex the arrangements, they still don't know they exist. After all, as you say "...it would be possible to arrange atoms in such a way as to have very complex reactions to certain inputs. That is basically what the human body is..." So isn't it possible that the human body is a complex combination such that one of the outputs is this thing call self-awareness? Could it be that the human body is so arranged that it takes in various inputs and produces various outputs and in particular, one of the outputs is awareness of the self?

Your alternatives are also interesting - particularly the issue of whether by losing atoms our identities change. This sort of theory raises a host of problems and questions I could ask but since I know it isn't what you really have in mind, I'll won't bother you with them unless you want.

In general, it seems as though you reason from self-awareness to the existence of a soul. I would venture to guess that you don't believe that plants are self-aware, but are animals? If yes, do they have souls too? If no, how can you tell that they aren't self-aware? How do you know that I am self-aware? Maybe I'm just some sort of robot programmed to behave very much like a self-aware human (like Descartes' evil genius or like The Truman Show where there aren't actors but instead there are very accurate robots). How do you know that I am self-aware? It seems to me you have a couple options:

- (1) You could give a reason for believing that I am self-aware, but I don't think that will stand up in light of the possibility that I might be some sort of robot
- (2) You could accept that you cannot know that I am self aware. In this case, your argument shrinks from "humans have souls" to "I have a soul" and collapses into solipsism
- (3) You could say "damn it roy, if you aren't willing to grant me that all humans are self-aware then I'm not ever going to be able to argue that we have souls and if you don't believe that all humans are self-aware, then you're not worth arguing with."

I'd take option (3). But the a question still remains - how do you know what is self-aware? How do you determine what is self-aware? What are your criteria? Do animals fit that criteria?

To sum up, my questions are (1) how can you be sure that this thing called self-awareness isn't just another outuput of this very intricate machine called the human body? (2) what does self-awareness consist in? are animals self-aware? what does that mean regarding them having souls?

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All in all, I'm very interested in your argument. I think you've got something here but there may be some lingering details to work out.

Take it easy,
Roy

On 9 January, 2002, Rick wrote:

Wow, neat. I like Roy's option (3).

Since I'm also getting paid to do engineering and not philosophy, I'll keep this short. I appreciate the argument that nature works in gradients, and that absolute thresholds are rare. However, some thresholds do exist, like critical mass. Also, matter will change states at varying temperatures. One could argue that a solid isn't much different than a liquid, but I do believe certain chemical reactions will or will not take place depending on the temperature.

With this in mind, I like to think that there *is* a point where we become self-aware. I'm not saying it comes on instantly, or even quickly. But I like to think that rocks are completely non-self-aware. Moving up a step, individual cells in our body? Not likely. Sperm cells and egg cells included, which I like because I like to think that zygotes are not self aware. But as we develop, our minds become more complex, we begin to observe things. Perhaps we then observe that we are observing things, and self-awareness begins to grow.

And the argument about verifying a soul/self-awareness is interesting. I believe that there is no Turing test for the existence of self-awareness; that one could not make a distinction between a very complex machine and a person simply through observations of the 'input/output' of the machine/person...

-- Rick

Further Musings on the Soul

When I first wrote the essay, *Musings on the Existence of the Soul*, I'd given the subject a lot of thought, but hadn't done much actual research. My basic argument was that we're not just automatons – we experience things. Since "experience" isn't a property of matter, our experience must come from something immaterial – a soul.

Well, after doing a little more research into this topic, I discovered, unsurprisingly, that other people have already thought along those lines (one of the humbling things I've learned as I've grown older, especially with the Internet and how easily it makes information available, is that no matter how deep or profound of an idea I think I've come up with, it's almost inevitably been written about by someone else before me, sometimes even thousands of years ago). What I was calling 'experience' is more formally known as 'qualia',²¹ and there's a whole Philosophy of Mind²² dealing with this issue.

One of my original assumptions was that experience couldn't be a property of plain matter. One could arm chair philosophize about this all they wanted, but that gets you nowhere. The best thing to do is to look for evidence that may or may not support this. Unfortunately, given the subjective nature of experience, it's a very difficult topic to find data on. However, since this is a discussion on souls, and the classical understanding of souls is that they are our true identity and would influence our personalities, we could instead look for evidence dealing with what controls our personality. A very informative website, Ebon Musings, has an essay titled *Ghost in the Machine*²³ dealing with this very issue. It lists a good deal of evidence explaining how our actions and emotions are controlled by our brains, and how physical changes to the brain can affect us. One of the examples he discusses, and probably the most famous in these types of discussions, is a man by the name of Phineas Gage²⁴. Gage was a foreman in charge of blasting for the railroad. In 1848, he was involved in an accident, where an explosion sent a tamping iron through his head, destroying a part of his brain in the process. He survived the incident, but had a completely different personality afterwards. Strokes and Alzheimer's disease provide more examples of how our personalities can be affected by changes to the brain.

The fact that it is our physical brains that control our personality is not definitive proof against a soul. It's still possible that to experience qualia, we need an immaterial soul. However, with that line of reasoning, the function of the soul

²¹ <http://en.wikipedia.org/wiki/Qualia>

²² http://en.wikipedia.org/wiki/Philosophy_of_mind

²³ <http://www.ebonmusings.org/atheism/ghost.html>

²⁴ http://en.wikipedia.org/wiki/Phineas_Gage

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is greatly reduced. It's basically just an observer, along for the ride. And if that were true, what exactly would existence be like after death? Would a soul retain memories? Would it even have a personality?

I don't want to admit it, because the emotional side of me still really wants to reunite with dead loved ones, and to be able to still watch over my daughter after I die, but it really does seem most likely that we don't have souls, that our physical brains really are the true centers of what we would consider 'self.'

This raises some interesting questions. Where exactly does this awareness come from? Is there any way to know what else has this awareness? Barring solipsism, we can be pretty sure that other humans experience qualia, because we can easily communicate with them. Other animals, too, seem to share this trait. If this awareness is an emergent property of matter, and we know that it occurs in our brains, it seems only natural to assume that it would occur in the brains of other animals. But, are brains the only complex structures that can produce this property? The less we can interact with something, the less we can tell what it might be experiencing. Do plants experience emotions, but we have no way of telling because they can't talk to us? What about the sun? It appears to have some pretty complex reactions going on inside it. Could those reactions be generating some type of experience? Does it even take complexity? Could a rock have some sense of awareness, but with no sensory organs, and no way to communicate with us, we just wouldn't have a way to tell?

And with as specialized as regions of our brains seem to be, how does our consciousness get manifested in a coherent way, incorporating all the thoughts and inputs from different brain regions? Is our consciousness really that coherent, or could it even possibly be that the region of the brain that incorporates input from all other parts is the true center of our 'self,' and that the other regions of our brain might even have their own sense of awareness? Or, not trying to sound too pantheistic²⁵, could this awareness not require actual physical contact (because in reality, no two atoms are ever truly touching, anyway), and be some type of hierarchical phenomenon? Could ant colonies be 'super consciousnesses,' or could there even be a super consciousness for the entire universe? That last concept seems a bit too outlandish and I really do doubt it, and even common sense would seem to indicate that it's absurd, but knowing how bad of a guide common sense is to the mysteries of the universe (such as quantum mechanics), this still remains an intriguing remote possibility.

In the end, even if we don't have souls, this universe of ours truly is a wondrous place. I'm glad, however it comes about, that I get to experience it.

²⁵ http://en.wikipedia.org/wiki/Naturalistic_pantheism

How to Handle Religion with Your Children When You Don't Believe in the Religion

The following is an e-mail exchange I had with someone concerning how to handle religion with our children. I considered revising this into an essay, partly to change those portions where my views have changed, and partly to better express certain thoughts, but I think the e-mail format helps reveal part of the struggle I went through in abandoning Christianity.

For anonymity, my correspondent will be referred to as John Doe.

My Original E-Mail, from 6 April 2006:

[John Doe],

I thought I'd ask your viewpoint on this, since I think you're in a somewhat similar situation as me. I don't know if you ever read my website, but I've basically come to the conclusion that I no longer accept Christianity. I'm not atheist, maybe more of a deist. I still think we have some type of soul (whatever that is), so I'm not anti-religious. I just doubt Christianity in particular, and question the existence of some divine being in general. Anyway, I've come to all that on my own and that's not the real point of this e-mail. The real reason for it is, being in this position, how do you handle religion with your kids?

To put this in context, yesterday and a few other times, Alex went along with one of her friends to "Sunday" school (on a Wednesday, I know). That makes me a little uneasy, but at the same time, I don't want to force my beliefs on her. Usually, it's nothing more than daycare, but yesterday she came back with some worksheets, with things written on them like "I love Jesus," "Jesus loves me," "The Word is truth." So, me and Irma had a bit of a discussion on this, but I usually do better on these types of things by writing them out - it makes me organize my thoughts better. So, I wrote her an e-mail this morning about it. Then I figured, hell, as long as I've already got it written down, maybe I could get your thoughts on it, too. How do you handle this type of thing?

-Jeff

From: Jeffrey R. Lewis
Sent: Thursday, April 06, 2006 12:40 PM
To: 'Lewis Irma
Subject: Last Night's Topic

How to Handle Religion with Your Children When You Don't Believe in the Religion

Okay, I said I was going to write you an e-mail about this, so here goes.

Here's where I'm coming from. I was raised as a Catholic, and taught all that stuff as being true. So, I accepted it for a long time. It's not that I didn't have any doubts, but religion gives you a huge incentive to not doubt it, what with the reward of heaven and the punishment of spending eternity in hell [not to mention the fact that as an impressionable kid, you're told it's true by authorities that you generally trust, and the social stigma that goes along with doubting religion²⁶]. So, it took me until just recently to get past that and actually look critically at my religion, including the Bible and Christian religious concepts in general. And then, I was finally able to say that, you know what, I don't buy into Christianity.

My concern for Alex is that I don't want her to be indoctrinated into it like I was. If, as she gets older and can do more thinking for herself, she decides that she wants to become religious, whether Christian or something else, well, I can't stop her. But, I want it to be her decision, not some belief that's instilled in her as a child, that she's afraid to question because of a fear of being punished in the afterlife. And with as impressionable as kids are, she is likely to accept a lot of what she hears from adults. I mean, that's just the way it is. We tell her to listen to and respect adults, and to pay attention to and learn from her teachers. When she goes to places like Sunday school, she's not listening to arguments and weighing the pros and cons to decide if she accepts it. She hears an adult in a position of authority tell her something, so she believes that it's true.

Now that I've had a chance to really look at my religion critically, it's made me realize that religion somehow gets automatic respect, especially Christianity in this country, as opposed to other superstitious ideas. Here's a good analogy known as Russell's teapot (http://en.wikipedia.org/wiki/Russell's_teapot), named after the philosopher Bertrand Russell who wrote it:

If I were to suggest that between the Earth and Mars there is a china teapot revolving about the sun in an elliptical orbit, nobody would be able to disprove my assertion provided I were careful to add that the teapot is too small to be revealed even by our most powerful telescopes. But if I were to go on to say that, since my assertion cannot be disproved, it is intolerable presumption on the part of human reason to doubt it, I should rightly be thought to be talking nonsense. If, however, the existence of such a teapot were affirmed in ancient books, taught as the sacred truth every Sunday, and instilled into the minds of children at school, hesitation to believe in its existence would become a

²⁶ This bracketed note was included in the forward to John Doe, but not the original e-mail to my wife.

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mark of eccentricity and entitle the doubter to the attentions of the psychiatrist in an enlightened age or of the Inquisitor in an earlier time.

I don't know whether or not there's some divine being in this universe (though I don't think it's a necessity). I'm also pretty sure that we do have souls, so I'm not going to rule out religion in its entirety. But, I'm nearly positive that the Bible is not the divine word of God, and that it's not a good guide to live your life by or base your morality on (you ought to read that essay I wrote on that some time so you can see why I'm so sure²⁷), and I'm also pretty certain that Christianity in general isn't true, even if you allow for the Bible being the work of humans. So, I'm a little torn as to how to approach religion with Alex. On the one hand, I don't want to force her to have my beliefs. On the other hand, if someone told her that there was a teapot in orbit between Earth and Mars, would I be doing the right thing to tell her, "Well, you know, people have different beliefs. Some people believe in the teapot, and some people don't, and you'll have to decide for yourself," or would it be better to tell her that, "No, there really is no teapot in orbit between Earth and Mars, and the people that do believe that are just holding on to an old superstition." Why should I willfully allow her to accept ideas that I know are wrong?

Here's a similar way to look at that above argument. Suppose it wasn't a Christian Sunday school that she was going to. Suppose her friend was of the old school Geek/Roman religion. You know, Zeus and Hercules and Aphrodite and the whole pantheon of Gods. Suppose she came home with worksheets from Sunday school where she had written, "I love Zeus," "Zeus loves me," "Apollo is the path to knowledge." How then, would you feel about her going to religious classes with one of her friends? And that's another point. If we're going to expose her to religion at such a young, impressionable age, why Christianity? Wouldn't it be more fair to expose her to multiple religions?

I guess to wrap it up, you may be asking, well, if she does become a Christian, what harm could come of it? I'll steer clear from the more abstracts like blind faith versus free thought & evidence based critical thinking, and issues where science contradicts the Bible, and I'll discuss just one morality argument in particular - homosexuality. The Bible says it's wrong. Most Christians accept that it's wrong. For the larger part of my life before I started questioning Christianity, I went along and said that it was wrong. Now, other than saying,

²⁷ The essay referred to in this sentence is not included in this collection. It can be found on my website at:

http://www.jefflewis.net/bible_interpretation_1.html

However, much of the content was included in the first essay of this collection, *Abandoning Christianity – My Reasons and My Journey*.

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"the Bible says so," I can't see any reason why homosexuality is morally wrong. It's just something that two people do. But look at all the prejudice towards gay people in this country because of it. Look at how the gay marriage vote turned out²⁸. That's an actual, concrete result of the way people currently interpret Christianity. How much do we want Alex to be morally/ideologically influenced by people with prejudices like that? And homosexuality isn't the only moral problem I have with Christianity. There are plenty of others (like the Bible condoning slavery, how women are treated, etc.), but I figured one good, concrete example would be enough for this discussion.

Anyway, those are my thoughts on the whole thing. I could probably go on a lot more, but I don't know that I'd really be adding much other than details. So there you go.

-Jeff Lewis

[remaining signature removed]

[John Doe's] Reply from 7 April 2006:

I have to say I have wrestled with how to handle religion with the kids. I pretty much agree with almost everything that you said but actually go a little further in believe that existence of a soul falls into the same realm as an existence of a god. There is no evidence for either and no reason why one would need to exist. I understand that science does not yet have explanation for everything and has not identified everything, so I accept that new things that currently appear to be supernatural will be supported by future science. However, currently I have no reason to believe in the existence of a god or a soul.

Anyway, what to do about the kids. I think it is important for my children to understand religion and how it controls so many people. How can you even begin to understand the mid-east conflicts without including religion? I am also worried that my kids will be discriminated against in school if they are not religious. It still seems acceptable in society to belittle atheists. If they understand it and they will be less likely to put themselves in a situation where they would be discriminated against.

When [my wife] was pregnant with [our daughter], I felt like I needed to come up with some answer to this. My old boss at [my university] was atheist, but he

²⁸ Proposition 2 from the 2005 Texas general election, which was a referendum that passed, adding a new provision to the state constitution that "Marriage in this state shall consist only of the union of one man and one woman," and prohibiting the state from recognizing same sex marriages performed in other states. [http://en.wikipedia.org/wiki/Texas_Proposition_2_\(2005\)](http://en.wikipedia.org/wiki/Texas_Proposition_2_(2005))

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used to go to a Universal Unitarian Church on occasion. Apparently they more talk about religions than worship and teach about multiple religions in Sunday school. I thought this might be useful, but in reality, is it really worth spending an hour a week to teach about ancient myths just because many people believe them. I think a weekly lesson would be excessive. Actually, my old boss said they went for a while, but quit going. I think that at some point I am going to have to try and explain the whole religious thing to the kids, but they are probably still a little young. Currently, [our daughter] is enrolled in a religious nursery school and they talk about god and Jesus. The first day they were saying good morning to god. [Our daughter] was looking around to figure out which of the people was god. She also knows that Jesus's mother and father are Mary and Joseph, but I don't think that she understands their significance any more than sponge bob and patrick. They are just characters in stories. I have a friend here who is atheist, and his daughter also goes to a religious nursery school. They say a prayer before eating dinner every night. He doesn't think it's worth making an issue of it at this young age.

You have a bigger issue to deal with because Alex is getting old enough to start to understand. She is probably a little too young to understand the scientific process, but I think that teaching how to think in that way is really important. I don't think I will send my kids to "Sunday" school, even if their friends go. A slight complication in this is that [my wife] is still uncertain about religion and I think she would like them to learn about religion, so they can "make the decision themselves." I don't mind them hearing about religion, but I don't want them to hear about it in a way that states it as the only truth. Occasionally I ask [our daughter] about what she learns in school to see if she is thinking about it in a supernatural way. Until she does, I will just let it go. When she does, I will have to have a discussion with her and also decide how often I want to send her to places that lie to her.

[John Doe]

My Response from 7 April 2006:

Thanks for the reply. It gives me a little more to think about. I think it might be about time to have a discussion with Alex about people's religious beliefs. Let her know that lots of people believe lots of things, from hinduism to Christianity to tribal religions, and plenty of people that don't believe any of it. Getting her to think critically for herself is really the ultimate goal, but it's a whole lot tougher to teach thinking than to just teach facts.

The daycare problem's a tough one. She's enrolled at one of the church daycares down here. All of the best ones are run by churches. I really don't know of any good ones that aren't. (I actually had to bite my tongue this morning. Today's a

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snow makeup day, so I took her to daycare instead of school. The sign on the door of her class said "Friends of Jesus Class." I almost said, "Oh, you're all friends with a hispanic kid," but I didn't.) They really don't do a whole lot of religious education in those classes, but I'm starting to notice it more. I don't know if it's because I'm more sensitive to it, or because Alex is getting older to where she'll start to understand these things, so now's the age where they really start to teach it.

At least you're in the northeast. I'm down in the middle of the Bible Belt. There's still some discrimination between Baptists and Catholics down here - just imagine how they'd treat atheists. That's one of the things that really worries me about having this talk with Alex. Imagine the reaction she'd get from people if she blurted out, "My daddy says that Christianity isn't true." (And she will argue with kids - at a birthday party I heard her arguing with a kid a couple years older than her who said that if you let a balloon go outside, it would go all the way up to space, and maybe even the moon. Alex told him that it couldn't because the balloon needed the air from the atmosphere to float on. Boy was I proud.)

There was an interesting story that made it around the blogosphere the other day about how distrusted atheists actually are. Here's a link to the ABC News story ([see footnote²⁹]), and another to the news release from the university that did the study ([see footnote³⁰]). Here are two paragraphs from the ABC article that sum it all up pretty nicely:

Asked whether they would disapprove of a child's wish to marry an atheist, 47.6 percent of those interviewed said yes. Asked the same question about Muslims and African-Americans, the yes responses fell to 33.5 percent and 27.2 percent, respectively. The yes responses for Asian-Americans, Hispanics, Jews and conservative Christians were 18.5 percent, 18.5 percent, 11.8 percent and 6.9 percent, respectively.

When asked which groups did not share their vision of American society, 39.5 percent of those interviewed mentioned atheists. Asked the same question about Muslims and homosexuals, the figures dropped to a slightly less depressing 26.3 percent and 22.6 percent, respectively. For Hispanics, Jews, Asian-Americans and African-Americans, they fell further to 7.6 percent, 7.4 percent, 7.0 percent and 4.6 percent, respectively.

²⁹ <http://abcnews.go.com/Technology/story?id=1786422&page=1&technology=true&technology=true>

³⁰ <http://www.ur.umn.edu/FMPro?-db=releases&-lay=web&-format=umnnewsreleases/releasesdetail.html&ID=2816&-Find>

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Knowing how a lot of Americans feel about Muslims, blacks, and gay people really makes it clear how deeply they dislike atheists. And that's why I'm worried about Alex saying the wrong thing to the wrong person once I go through and have this talk with her.

-Jeff Lewis

[remaining signature removed]

[John Doe's] Response from 7 April 2006:

I hadn't seen this study, but I do believe it. It affirms my concerns about possible discrimination if the girls aren't careful.

I should point out that Western Maryland is actually extremely religious. The high pregnancy rate in Washington County is a direct reflection of the parents refusal to allow sex ed in school.

I believe that the number of atheist state in the article is probably a little low. I saw a CNN survey that 30% of the respondents didn't believe in god. Thought this is "respondents" to an extremely liberal news channel. I think that there is also a very large number of people who don't "really" believe, but haven't done anything about it. They still go to church and fit into society. For some, I suspect that the fear of eternal damnation prevents them from making the break that they believe in their heart.

Take heart, I think that close to 20% of the people I work with don't believe in organized religion. Though probably only half of them would call themselves atheist. The others believe in some sort of spirituality or possibly a higher power though not really in the same sense that the major religions describe. On the other hand, a communal, christian prayer was said before the christmas party 2 years ago. I think that many people who are devout christians just assume that it is the norm and that all around them agree. I don't think that everyone I work with realizes how many non-believers they work with. Many of the atheist that I work with, including myself, are very careful about who knows about it. I should point out that division of who is or isn't falls heavily across the scientist / non-scientist divide.

Got to go.

[John Doe]

The Benevolent Dictator – Should We Worship the Christian God?

When I went through the period of questioning my acceptance of Christianity, the single question that I was trying to figure out was whether or not God exists. At the time, it seemed obvious to me that if God did exist, then I should worship him, and if he didn't exist, then there was no need to worship him. It never dawned on me to ask, if God does exist, *should* I worship him?

I've tried to think of a good way to express this, and I've come up with the hypothetical situation below. Admittedly, it's a very transparent analogy, but perhaps putting it into human terms instead of divine terms will allow a few people to get past the mental block of not questioning anything about God.

Suppose you were living in a nation ruled by a very old dictator - so old that everyone currently alive in the country has lived their whole lives under his rule. Before he became dictator, your country was a backwater. He built up the country- highways, factories, hospitals, universities, theaters, are all thanks to his rule. Also before he became dictator, he was general of the army. He lead your nation in a war against attacking enemies. Had the enemies succeeded in their attack, they would have massacred every last one of your great-grandparents, so you owe the dictator your very existence. He claims to be a benevolent ruler, and to be far more intelligent than any one of his subjects. All that he asks in return for his kindness is that you follow his laws, that you don't question his laws (because he is, after all, much more intelligent than you), and that you like him. If you break any of those three rules, you will be arrested by the police, and taken off to be tortured to death. He even sends out police squads at random with super accurate polygraph machines to test whether or not you actually like him.

Every week, there are patriotic rallies, where you get together with your community, and have a big celebration where you all profess how much you like your leader, and thank him for all he's done for the nation.

Some of the laws that he's made may seem a bit arbitrary to people outside of his nation, but you've been living there your whole life so you don't know any different. Suppose that one of those laws is that nobody can be over six feet tall. If you see anybody taller than that, you are to report them to the police, so that they can be arrested and taken off to be tortured. This results in a handful of people walking around stooped their entire lives, to stay under the legal height. From time to time, a curious person may question one of the laws innocently without being punished, but community leaders almost always have a good explanation. Even for the six foot height limit, the argument is that taller people would necessitate higher ceilings, which would use more building materials and

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be wasteful. It's such a small thing to ask a handful of people to stoop for the greater benefit of the nation. Even when the community leaders don't have a good explanation, they can fall back to saying that the Leader is benevolent, and he is smarter than all of us, so he must have a good reason that we just can't comprehend.

You've heard of an under-world - a few people that reject the leader's laws, especially those that result in death by torture. They've even been known to try and rescue some of those criminals. And they don't like the leader, either. But these people, when they are found, are tortured the worst. And they're always found.

Now, in this situation, should you like your leader? Should you blindly follow his rules. What about the ones that require you to turn people in to be arrested, knowing they will be tortured? Would it be moral to follow his laws? Or would it be better to be part of the under-world, knowing that your life will end in torture, but at least doing your best to live your life in what you believe is a good way while you can?

I had my first experience with this in Christianity while I still considered myself a good Christian. I was at mass, and the entire congregation was singing. And for the briefest of moments, the whole thing seemed like groveling to me, like everyone in the congregation was afraid in the same way they would be of a dictator, and so they were going on and on about how good he was and how much they liked him. But, I still considered myself a good Christian, then, so I did my best to push that thought to the back of my mind.

A few years after that is when I really started to look critically at Christianity. By this time, I was going to a Methodist church, but I was already beginning to have my doubts. The reading that day was the story of God commanding Abraham to sacrifice his only son, Isaac (Genesis 22³¹). For anyone not familiar with the story, Abraham went along with the command. When the knife was in the air, and he was about to deliver the fatal blow, God stopped him. Abraham had passed the test, and proved that he really did love God above all else. Anyway, when I heard that story again that day, I remember thinking, boy what a great story this would have been if Abraham had gone against God's will. What a testament that would have been to the love he had for his son, to risk going against an all-powerful god to defend him.

I remember that part of my thought process in abandoning Christianity was asking myself, what if I was wrong, and God did exist. And my answer was, that I wouldn't want to worship a being like that, anyway. Despite all the

³¹ http://www.biblegateway.com/passage/?book_id=1&chapter=22&version=31

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flowery verse in the Bible about God being all good and all loving, there are just too many things that I find morally objectionable, that I never gave much thought to before I started questioning Christianity (condoning slavery, commanding the slaughter of innocent women & children, promoting misogyny, destroying entire civilizations, condemning homosexuality, sending bears to maul 42 youths for making fun of a prophet, and much more).

I know a Christian will say that you shouldn't put yourself above God, but I don't see why God gets that privileged position. Suppose the Bible is right, and God did create everything, and he is very powerful. But does that give a right to *demand* worship? Even if God was the first thing in existence, his existence was still just a cosmic accident. Who's to say that it's not just as likely that the random occurrence that caused God to be wouldn't have created a different god/gods with a different code of morality. And the moral aspect of the God of the Bible that bothers me the most is to threaten eternal torture in hell to those that don't worship him, no matter how good and nice they are to the people around them.

It seems to me that the God of the Bible is a dictator, demanding worship through threats. And to deny worship to a being like that, and to live your life in the way that you see as moral, even if it will ultimately result in your own eternal torture, seems to me to be the nobler course, as opposed to following his commands out of fear. But then again, I no longer believe in the God of the Bible, so it's not a big issue for me, anyway.

Problems with a Day-Age Interpretation of Genesis

In the wake of the Kitzmiller vs. Dover Area School District trial³², I did something that maybe I shouldn't have. I struck up a conversation with a couple co-workers about Intelligent Design, otherwise known as ID. We kept it friendly enough. They already knew my religious/scientific opinions (at the time, I was a liberal Christian), and I already knew theirs, so there weren't any heated arguments. I was just interested to see how fundamentalists felt about Intelligent Design, and about the judge's decision in the case.

Here's why I was curious to their opinion. It seems to me that if you're going to reject evolution on religious (Christian) grounds, it's because you believe in basically a literal interpretation of the Bible (i.e. that the creation story in Genesis is accurate). If you don't believe in a literal interpretation of the Bible (i.e. you believe in a figurative, allegorical, historical or some other interpretation), then there shouldn't be any religious reason to reject evolution. So I wondered, if you held to a literal interpretation of the Bible, what would be your take on Intelligent Design? A lot of the ID proponents claim that ID is really science, and that they're just trying to point out evidence of an intelligent designer. They stress that they're not trying to support the Bible. Further, some of the evidence that they use goes against a strictly literal interpretation of Genesis, such as using the Cambrian "Explosion" of 500 million years ago. Really, it makes me wonder why ID is so popular. It's bad science, as evidenced by its overwhelming rejection by the scientific community, and, from a fundamentalist viewpoint, it's bad religion, because it's counter to a 6 day creation.

So, when I brought it up to those co-workers that ID goes against a literal interpretation of Genesis because it allows for the Earth being billions of years old, they got kind of wishy washy on the age of the Earth. Their reply was something to the effect of, "A day in the life of God is like a thousand years to man," so how can we be sure how long the days in Genesis actually were. My first thought was, wow, so the Bible's only literal when it's convenient; otherwise, it's open to interpretation. But, I had heard the argument before (and even used a version of it myself when I was still a Christian – though not a creationist), so I decided to look into it a little further. After a little research, I

³² This was the first court case directly challenging 'Intelligent Design', a new form of creationism that gained popularity in the late 1990s and early 2000s. ID's main purpose was to promote creationism without explicitly mentioning God, since a previous court case had ruled on Constitutional grounds that religious creationism couldn't be taught in public schools. The ID proponents lost the Kitzmiller case rather dramatically, with the judge even referring to "The breathtaking inanity of the Board's decision".

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found people who said that in the original Hebrew, the word used for "day" in Genesis could be translated as either *day* or *age*, and that maybe *age* was the word that should be used there. This, or the day to a thousand years argument my coworkers used, actually turn out to be pretty popular arguments. So, I went back and took another look at Genesis, but these day-age interpretations still don't make any sense. Let's start right from the beginning, Chapter 1, Verse 1³³:

1 In the beginning God created the heavens and the earth.

2 Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters.

3 And God said, "Let there be light," and there was light. 4 God saw that the light was good, and He separated the light from the darkness. 5 God called the light "day," and the darkness he called "night." And there was evening, and there was morning—the first day.

So on the first day, God created a light, which he called day, and a dark, which he called night. I really have no idea what the Bible's referring to, here, since it's not day and night in the conventional sense. The real light of day is the sunlight that shines onto the side of the Earth that happens to be facing the sun at that particular time, and the darkness of night occurs on the side of the Earth that's in the shadow. Since Genesis doesn't say the sun was created until the fourth day, I don't know what this day and night refer to. I have heard the argument that light and darkness represent good and evil, but that doesn't explain the use of day, night, evening, and morning, which seem to be describing an actual solar day.

6 And God said, "Let there be an expanse between the waters to separate water from water." 7 So God made the expanse and separated the water under the expanse from the water above it. And it was so. 8

³³ As mentioned in the first essay, these passages are quoted from the NIV. Note however, that the NIV was revised in 2011, so the wording here is slightly different from the wording in the latest revision of the NIV. Also recall the discussion from the footnotes of the first essay, that the NIV is not the most reliable of translations. Here in chapter 1 of Genesis, it's not too bad. Chapter 2, however, is a different story:

http://www.jefflewis.net/blog/2011/02/reliance_on_bible_translations.html

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God called the expanse "sky." And there was evening, and there was morning—the second day.

On the second day, God created the sky "to separate water from water." Once again, I'm confused. What waters does the sky separate? At this point, Genesis seems to indicate that the Earth is covered by one vast ocean, so that's one body of water. But what other water is this being separated from? Is there some vast body of water floating around in space somewhere?

I find it very easy to imagine a primitive people looking up, and imagining an actual discrete physical dome above their heads. That could even explain why they thought it was covered in water (it is blue, after all, and rain does fall from up there). But in reality, "sky" is just some fuzzy notion of the atmosphere at some arbitrary height above the ground. Think about it this way – we know that airplanes fly through the sky, but when exactly do they get there? Immediately after takeoff? 100 feet up? 30,000 feet? It's not clearly defined. Perhaps this issue of defining what's meant by "sky" is merely a translation issue. Perhaps the Hebrew word doesn't have the same ambiguity as English. Or perhaps it's meant to mean simply "atmosphere."

However, even assuming that the Bible is here referring to the creation of the atmosphere, I still don't understand what's being separated. Maybe I'm being too literal, but I'm trying to figure out some way that this passage means actual separation of one group of H₂O molecules from another group of H₂O molecules. I've heard the argument that maybe it was referring to clouds being separated from the ocean, but that explanation still makes no sense. Water is not present in the atmosphere only in the clouds – water vapor is present from ground level all the way up. It's just that at some point it gets cold enough for that vapor to start condensing – the altitude at which clouds begin to form. Even assuming that it's liquid water the passage is referring to and not vapor, remember that depending on conditions, the altitude at which water condenses can vary, even going all the way down to ground level. It's just that we refer to ground level clouds as fog.

9 And God said, "Let the water under the sky be gathered to one place, and let dry ground appear." And it was so. 10 God called the dry ground "land," and the gathered waters he called "seas." And God saw that it was good.

11 Then God said, "Let the land produce vegetation: seed-bearing plants and trees on the land that bear fruit with seed in it, according to their various kinds." And it was so. 12 The land produced vegetation: plants bearing seed according to their kinds and trees

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bearing fruit with seed in it according to their kinds. And God saw that it was good. 13 And there was evening, and there was morning—the third day.

Finally, on the third day, Genesis starts talking about things that I can understand. First God created the continents, or at least "land." Now that there was land to work with, he created seed bearing plants and fruit bearing trees. There's no explicit mention of any other types of plants anywhere else in Genesis, so I think it would be safe to assume that this third day of creation accounts for all of the plants. Remember, the sun still won't be created until the fourth day, so there was still no sunlight for these plants to use for photosynthesis. And there's no mention yet of any animals being created, including insects, so there was no way for flowering plants to reproduce through insect pollination, or for certain other plants to reproduce which require that their seeds pass through the digestive system of an animal, first.

14 And God said, "Let there be lights in the expanse of the sky to separate the day from the night, and let them serve as signs to mark seasons and days and years, 15 and let them be lights in the expanse of the sky to give light on the earth." And it was so. 16 God made two great lights—the greater light to govern the day and the lesser light to govern the night. He also made the stars. 17 God set them in the expanse of the sky to give light on the earth, 18 to govern the day and the night, and to separate light from darkness. And God saw that it was good. 19 And there was evening, and there was morning—the fourth day.

On the fourth day, God finally created the sun, the moon, and the stars, so now the plants could at least survive.

20 And God said, "Let the water teem with living creatures, and let birds fly above the earth across the expanse of the sky." 21 So God created the great creatures of the sea and every living and moving thing with which the water teems, according to their kinds, and every winged bird according to its kind. And God saw that it was good. 22 God blessed them and said, "Be fruitful and increase in number and fill the water in the seas, and let the birds increase on the earth." 23 And there was evening, and there was morning—the fifth day.

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On the fifth day, God created all of the birds, and all of the creatures of the sea. Now, there were finally some types of animal to distribute seeds. If flying insects are counted as birds, there were finally bees and other insects to pollinate flowers.

24 And God said, "Let the land produce living creatures according to their kinds: livestock, creatures that move along the ground, and wild animals, each according to its kind." And it was so. 25 God made the wild animals according to their kinds, the livestock according to their kinds, and all the creatures that move along the ground according to their kinds. And God saw that it was good.

26 Then God said, "Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground."

27 So God created man in his own image,
in the image of God he created him;
male and female he created them.

28 God blessed them and said to them, "Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground."

29 Then God said, "I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. 30 And to all the beasts of the earth and all the birds of the air and all the creatures that move on the ground—everything that has the breath of life in it—I give every green plant for food." And it was so.

31 God saw all that he had made, and it was very good. And there was evening, and there was morning—the sixth day.

On the sixth day, God created all of the "livestock, creatures that move along the ground, and wild animals." Also on the sixth day, God created people.

Problems with a Day-Age Interpretation of Genesis

I'll leave off with the Bible quotes there, and won't even attempt to address the discrepancies between that creation story and the subsequent creation story presented in chapter 2 of Genesis.

So, if you try to interpret Genesis as the days being ages of indeterminate time, you're still left with problems. If plants were created in the third age, and the sun in the fourth age, unless the ages were extremely short, the creating must have taken place right at the end of the third, and right at the beginning of the fourth ages, or else the plants would all die. I suppose that interpretation is possible, but there's still a big problem of many of the plants not being able to reproduce which are dependent on animals for pollination, germination, or seed dispersal. This would seem to indicate that the fourth age, the one where 99.99% of the material in the universe was created, would have had to have been very short, indeed. If the wording is supposed to be somewhat consistent, such that each "day" or "age" represents a similar amount of time, this presents a big problem with each day representing millions or billions of years.

If you're trying to use a day-age interpretation to try and reconcile Genesis with science, there are many errors with the Biblical account³⁴. First, Earth was certainly not the first planetary body, and our sun was certainly not the first star. Also, birds did not come before land dwelling animals – they evolved from land animals.

So, the day-age theory, or "a day in the life of God is like a thousand years to man" interpretations are just weak. Even ignoring what science tells us of the evolution of life on Earth, and the history of the universe as far as star and planet formation, there would have been no way for plants to survive an entire age without having the sun for photosynthesis, or the animals that they required for pollination, germination, and seed dispersal.

Now, if you stop and look at Genesis as being written by a scientifically primitive society with no idea of the true history of the Earth or the life on it...

³⁴ Of course, a literal young Earth interpretation of Genesis has all these problems and more. Given all the evidence that exists pointing to the ancient age of the Earth and the universe, it really is inconceivable that this creation story could be true on that type of literal level.

Confidence in Historical Knowledge

While this essay isn't strictly religious, since this topic sowed some of the first seeds of doubt in my mind concerning Christianity, and considering how many people reject these facts of the universe based on their religion, I figured it was a good topic to include in this collection.

Ever since I first realized that there were people that doubted evolution and the 4.5 billion year age of the earth, I've followed the debate. One of the arguments that seems to be somewhat common among the people who'd like to reject the science, is that there's no way to be sure about those things because they happened in the past and we can't go back and directly witness them. But this line of thinking just isn't true. Based on enough evidence, we can be as sure about things that have happened in the past as we can be about anything.

Ground Rules

I'll start off by saying that science does operate on a few assumptions. The first is the most basic - that evidence can be taken at more or less face value. I say this in defense of a philosophical argument, which is impossible to disprove scientifically - that the universe could have come into existence at any point, with the appearance of old age. This could be a religious creation story, such as a literal interpretation of Genesis, but it could also be the idea that the universe started exactly one second ago (or yesterday, as in Theodore Sturgeon's "Yesterday Was Monday"), with everything looking like the universe is ancient, and all of us having false memories. This is referred to as the Omphalos hypothesis in theology, or, somewhat derisively, as Last Thursdayism³⁵. There's no way to disprove that, so you more or less accept the evidence as it appears (Occam's razor and all that). When you see evidence of erosion, you assume it was caused by erosion. When you read a book, you assume it was actually written by a person. When you find a skeleton, you assume it came from an animal that used to be alive. When you look up into the night sky and see a star, you assume the photons originated at that star the same way they do from our sun, and have been travelling away from that star at the speed of light ever since. Of course you have to be on the lookout for hoaxes and mechanisms you might not have known about before, but that's why I said "more or less" at face value - you assume there's an actual mechanism responsible for the evidence, and that it didn't just appear out of nowhere. It's kind of analogous to arguing against solipsism (the idea that we can only be sure about what's going on in our own minds, so how can we be sure about anything external - maybe it's all just a

³⁵ http://en.wikipedia.org/wiki/Last_Thursdayism

dream) - there's no good way to do it, and it isn't very productive, so you just move past it to the more interesting problems.

Another assumption is that the general laws governing the universe work in the same way throughout the universe, and have worked generally the same way throughout history. The "constants" may not be constant, but the equations are of the same form. As an example, the force of gravity can be determined from Newton's Law of Universal Gravitation³⁶:

$$F = \frac{Gm_1m_2}{r^2}$$

It is possible that G, the universal gravitational constant, may vary throughout the universe, or that it has varied in the past, but the force of gravity can always be calculated based on the mass of the objects, and is inversely proportional to the square of their distances. Another example is the issue of radioactive decay rates, which is perhaps more pertinent to people rejecting an ancient universe, since these are commonly used as a dating method for objects such as fossils. I recently came across an article on the website, TalkOrigins, discussing this³⁷. The reader is encouraged to read that essay for more detailed discussion, but the gist is that radioactive decay rates are governed by several well established theories and associated constants, and physicists *have* looked for evidence of the fundamental constants changing, but they haven't found evidence of any major changes.

"Origins" as an Artificial Distinction

In various ways, I have seen it argued that "origins," such as the origin of humanity, species, the solar system, or the entire universe, are something that we as humans will never be able to know with certainty. The arguments I've seen are as simple as asking, "Were you there³⁸," to claiming that science can't

³⁶ Technically, Newton's law is actually only an approximation, as Einstein's Theory of General Relativity has been shown to be more accurate, but I think it still serves its purpose for this discussion.

³⁷ <http://www.talkorigins.org/origins/postmonth/aug06.html>

³⁸ <http://blogs.answersingenesis.org/aroundtheworld/2006/10/03/studio-60-on-the-sunset-strip-uses-ken-hams-were-you-there/> - "One of the ways I teach children to understand the philosophy of science is to teach them, based on Job 38:4 (when God asks Job, "where were you when I laid the foundation of the earth") to ask "Were you there??" when someone talks about millions of years, etc." - Ken Ham

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study the past because we can no longer experiment on it"³⁹. However, I think that lumping "origins" into a separate category from any other past event is an artificial distinction. Just because things happened before people were around doesn't mean that we can't still know things about them. To say that we can be sure about things such as the U.S. Civil War, but not about the evolution of life, ignores the way that we gather evidence to determine things. Consider this - my own personal origin was my birth. Is that to say that I can't know anything about what came before me, because I wasn't there to witness it? Should I doubt the existence of the U.S. Civil War? Of course not. Things happen. When things happen, they leave evidence. You study that evidence to try to determine what it is, exactly, that has happened. That's not just science, but everyday life. Sometimes, we are eye witnesses to an event, but even that is not absolute proof - consider magicians and optical illusions, to show just how easily our perception can be fooled. If we aren't an eye witness to an event, or even to verify that we weren't deceived or that we're not remembering the event incorrectly, we have to rely on other forms of evidence. If they're available, we can begin by comparing multiple eyewitness accounts. And while these comparisons can improve our confidence in the historical accounts, they're still not always entirely accurate, and there are other forms of evidence available.

I'll use a specific example to illustrate this - ice core sampling. We can currently witness the processes forming ice in glaciers and polar ice sheets. We can drill core samples into that ice and study those samples. What we find is consistent with the processes occurring right now. When we study the cores further, we can even find evidence of events documented in historical accounts, such as volcanic eruptions, to verify the dating determined in those core samples. So, here we have a line of evidence about the past independent of historical accounts, but which does match up when compared to historical accounts. The thing is, though, that these ice core samples go back a long way, hundreds of thousands of years in some cases, back beyond the time for which historical records exist. So the question becomes, if these cores were validated with historical accounts back as far as the historical accounts go, and beyond that, the cores keep going, forming a consistent record, what reason is there to doubt them? And when you further consider that these samples can be compared to ice cores taken from other locations, or even to such things as ocean sediment cores, our confidence in them can be even higher.⁴⁰

³⁹ <http://sciencetheoryreligion.angelcities.com/index.html> - "The contention in this examination of the origins debate is that the debate should have never been placed within science because it cannot be established within its jurisdiction. This online article will continue to explore the indicators that the study of ORIGINS is outside scientific theory and inaccessible by scientific methodology." – unknown author

⁴⁰ <http://www.sciencedaily.com/releases/2000/02/000229074731.htm>

How Science Can Be Applied to Past Events

An extension of this concept that we can't be sure of the past because we weren't there, is, as was stated above, that studying the past is outside the realm of scientific investigation. The logic goes that there's no way to test scientific theories about the past, because it's a "done deal" that we can't perform experiments on. However, some ideas about the past can be tested through observation; they can be falsified. That is why some of them can be regarded as scientific theories, and not just ideas. Like any other historical event, they are a "done deal," but we certainly don't have all the evidence. So, with every archaeological dig, every astronomer looking into a telescope, every biologist studying DNA, we are compiling more evidence to test the current theories about the past. Look at it this way - the way electrons work is already a done deal. Electrons were just the same in Benjamin Franklin's time as they are in ours. However, by performing laboratory experiments, our knowledge of electrons increased. Nothing has changed about electrons since we began to experiment on them, but we do understand them better. History will not change, either, but as we gather more evidence, we can understand it better, too.

As an example, consider evolution. Evolutionary theory predicts a "tree" of life, where all animals alive today can be traced back through common ancestry. This is falsifiable. One way would be to find ancestors of an animal that didn't fit into this tree. Let's look at whales, since they're one of the more dramatic examples of animals evolving to live in an entirely different environment from their ancestors. Whales are warm blooded, give birth to live young, have mammary glands, and a whole host of other traits that place them squarely as mammals. So, whales must have the same ancestors as the other land-based mammals.⁴¹ Finding transitional fossils from whales to fish, for example, instead of whales to land based mammals, would falsify evolutionary theory. Another way to falsify evolutionary theory would be finding animals out of chronological order. To pick a more personal example, since we know humans, chimps, and bonobos share a common ancestor, finding fossils of humans, chimps, or bonobos that predate that common ancestor would disprove the theory, as well.

Another reason why some people argue that history is outside scientific investigation, is that because it's already completed, you can't make any predictions about it. But scientists can, in fact, make predictions. A very good example of this just made the news recently - *Tiktaalik Roseae*, a transitional animal between fish and tetrapods. Before the discovery of this fossil, scientists

⁴¹ If one knew nothing else about the history of life, an alternative explanation could be that mammals evolved in the ocean as whales, and then transitioned to the land. However, knowing as much as we do about mammalian evolution, we can be sure that mammals first evolved on land from earlier tetrapods.

already knew about some of the transitional animals between fish and tetrapods, such as Panderichthys, which was more fish-like, and Acanthostega and Ichthyostega, which were more tetrapod-like. Based on the ages of those known animals, paleontologists were able to predict when an intermediate form must have been alive - the early Late Devonian. Also, because it was an intermediate between fish and land animals, they had a pretty good idea of what habitat it most likely lived in (shallow waters - so probably swamps or rivers). So, when they set out on an expedition specifically in search of this creature (not knowing exactly what it was going to look like, but having a pretty good idea), they knew where to look for it, and they found it - in an early Late Devonian fossilized river bed. That is a pretty powerful prediction based on evolutionary theory. (In anticipation of the people that would confuse this as a case of bias, saying that scientists were influenced into calling Tiktaalik a transitional species because that's what they were expecting to find - that's not the case, any more than predicting that when you let go of a ball that it will drop is a bias towards Newtonian physics. It is simply a prediction based on the evidence they had, operating in the framework of evolutionary theory.)^{42,43}

Scientists can also observe today some of the processes involved in evolution. Consider speciation - using the commonly accepted definition of species as groups of animals that can't interbreed. Speciation is necessary for evolution to have produced all the diversity we see around us, or ancestral populations wouldn't have been able to "branch out" like evolutionary theory predicts. And speciation has been observed in modern times. One example is a new species of mosquito that was observed in the London subway system.⁴⁴

Mutation and natural selection are the two other big terms you hear about when talking of evolution, and both of those are also observed in modern times. A good recent example was actually studied on the Galapagos. When a population of a species of finch arrived on an island and began competing with the finches that were already there, natural selection acted on the existing population - those with smaller beaks that weren't directly competing with the newcomers fared better, and so there was a shift to smaller beak size throughout the population.⁴⁵

For an even more dramatic example of what mutation and selection can accomplish, one needs only look to domesticated animals (or plants). Some would argue that this is "artificial" selection, not "natural" selection, but the fundamental processes really are the same. There's genetic variability being introduced through random mutations, and some factor that causes the organisms with certain mutations to have more offspring than other organisms.

⁴² <http://www.sciencedaily.com/releases/2000/02/000229074731.htm>

⁴³ http://www.scienceblogs.com/pharyngula/2006/04/tiktaalik_makes_another_gap.php

⁴⁴ <http://www.madsci.org/posts/archives/2000-04/956696920.Ev.r.html>

⁴⁵ <http://abcnews.go.com/Technology/wireStory?id=2188243>

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Just look at what breeders have been able to do with dogs, the amount of differences there are between the different breeds. (And to all the people that say, well, they're still just dogs - I know. But this example does illustrate that mutation and selection can introduce rather large morphological changes.)

So, just like with the ice core example, the processes that would drive evolution can be observed today - speciation that can turn an original population into two separate breeding populations, and genetic mutation and selection which can create changes in those populations. Studying the evidence from the past seems consistent with those processes. So, what reason is there to doubt that evidence?

Are Scientists Biased by Preconceptions?

I'd like to briefly discuss the notion of preconceptions - the idea that scientists interpret the evidence differently based on their preconceptions (for example, that other ideas may fit the evidence as well as typical evolutionary theory, but that scientists are so biased by their preconception that evolution is true, that they interpret all the evidence to fit). While scientists are human, and subject to mistakes just like anybody else, I will use two examples to show how scientists have changed their view based on the evidence, even though most of them were operating under different preconceptions.

The first example is the theory of plate tectonics. For centuries, scientists, and most people for that matter, believed the earth was largely static. Yes, there were earthquakes, and Charles Lyell's very influential *Principles of Geology* of the 1830's recognized that land and ocean levels could rise and fall⁴⁶, but nobody thought that entire continents were moving. Continental drift came about as a theory, positing that continents moved through oceanic crust, which never really caught on. Finally, in the 1960's, plate tectonics was proposed, where the entire crust of the earth was made up of plates which were floating on the magma of the mantle. Within a couple decades, all those scientists who had the preconception of the earth being static came to accept plate tectonics. Actually, the Wikipedia entry says it much better than me, so I'll quote part of it below:

The acceptance of the theories of continental drift and sea floor spreading (the two key elements of plate tectonics) may be compared to the Copernican revolution in astronomy (see Nicolaus Copernicus). Within a matter of only several years geophysics and geology in particular were revolutionized. The parallel is striking: just as pre-Copernican astronomy was highly descriptive but still unable to provide

⁴⁶ http://en.wikipedia.org/wiki/Charles_Lyell

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explanations for the motions of celestial objects, pre-tectonic plate geological theories described what was observed but struggled to provide any fundamental mechanisms. The problem lay in the question 'How?'. Before acceptance of plate tectonics, geology in particular was trapped in a 'pre-Copernican' box.

However, by comparison to astronomy the geological revolution was much more sudden. What had been rejected for decades by any respectable scientific journal was eagerly accepted within a few short years in the 1960s and 1970s. Any geological description before this had been highly descriptive. All the rocks were described and assorted reasons, sometimes in excruciating detail, were given for why they were where they are. The descriptions are still valid. The reasons, however, today sound much like pre-Copernican astronomy.⁴⁷

As the second example, I'll use the big bang theory. Prior to the 1920's, most astronomers and scientists (including Einstein), thought that the universe was static, that it had been around, well, forever, and would continue to exist forever. Then, in the 1920's, observations were made that very strongly indicated that the universe was expanding, and with a few more observations, the Big Bang theory was born. Once again, scientists put aside their preconceptions, and followed the evidence.^{48,49}

These two examples could raise an objection to science – if previous theories had been overturned so readily, what assurance do we have that current theories won't be overturned⁵⁰. The answer is that not all theories are equal. The quoted passage from Wikipedia above alludes to this. Before those particular fields of science had been overturned, they were mostly stamp collecting, amassing facts, but without much predictive power. Once you have a good theory that you can use to make strong predictions, you can start testing those predictions pretty quickly to see whether or not the results bear out the theory. It's also important to remember that not all theories carry the same confidence level. For example, the asteroid impact theory for the Cretaceous mass extinction doesn't have as much confidence as the fact that birds are highly specialized theropod dinosaurs (there is a very high level of confidence that an asteroid impacted the earth

⁴⁷ http://en.wikipedia.org/wiki/Plate_tectonics

⁴⁸ http://en.wikipedia.org/wiki/Big_bang

⁴⁹ In a discussion on religion, it's interesting to note that one of the major contributors to the Big Bang theory was a Catholic priest, Georges Lemaître.

⁵⁰ This topic is also discussed in the next essay.

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towards the end of the Cretaceous, but correlation is not causation, and there is a possibility that the asteroid impact is just a coincidence, or possibly a confounding factor, and that environmental changes were the primary factor that caused the mass extinction).

Among humanity's endeavors, science may be young. But it has been around for long enough, practiced by enough people, and born out enough practical results, that we can be pretty sure that it works, and we can trust the results we get from it. We can be as sure about things such as the universe being billions of years old, humans and other apes having a common ancestor, birds evolving from dinosaurs, and the overall view of the geological column, as we can be about things such as the civil war, or knowing that the Earth revolves around the Sun. Sure, there are still some uncertainties, making our view of the past a bit cloudy, but we're not completely blind, and we do our best to clear away that fog with every new discovery.

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In a similar vein to the preceding essay, while this topic isn't exactly religious, many religious people do reject science because of their faith, so I thought it was fitting to include it here.

I tend to place a lot of value in science. I think it's the best method we have for answering questions with objectively true answers, and I think we can have a pretty high confidence in the answers it gives us. But, as several people have asked me, where does that confidence come from? Throughout the past, people have had explanations for aspects of the universe that they believed were correct, but have since turned out to be wrong (e.g. the Sun orbiting the Earth). Given humanity's history of failed explanations, shouldn't we expect that many of our current explanations are also wrong, and be a little more cautious in our certainty?

The simplest reason to be confident in science is a pragmatic one - just look at the results. Science as the formalized discipline that we're used to is a fairly recent development. It's only been around a few hundred years, getting started in the Renaissance, but not really coming into its own until after the Enlightenment⁵¹. But look at how fast our technology has progressed in that short time compared to the previous millennia of human existence. We've invented telescopes, steam engines, automobiles, semiconductors, airplanes, computers, TVs, radio, lasers, vaccines, antibiotics, cures for some cancers. We've sent people to the moon. These accomplishments are all based on knowledge that we've learned through science. It seems very unlikely that we would have been able to accomplish all of that if we didn't have a pretty accurate understanding of reality. Granted, there are other fields of science that haven't yielded practical applications, and possibly never will. For example, understanding the Big Bang may not ever give us any new technologies. However, given the technologies we have developed from other fields, we know that the methods produce reliable results.

Moving away from pragmatism, let's look at how science works. Richard Feynman once said, "Science is a way of trying not to fool yourself. The first principle is that you must not fool yourself, and you are the easiest person to fool." There are all types of ways that we can make mistakes in our reasoning. There's a great article from the Winter 2005 issue of *Skeptic Magazine* that I would encourage everybody to read, *The Double-Blind Gaze: How the Double-Blind Experimental Protocol Changed Science*⁵². The article is focused on medicine, but it's applicable to science in general. The article mentions a few of

⁵¹ http://en.wikipedia.org/wiki/History_of_science

⁵² http://www.jefflewis.net/double_blind_gaze.html

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the confounding factors that can affect our reasoning, including the placebo effect, the re-interpretation effect, and observer bias. One can find long lists of cognitive biases from sources such as Wikipedia⁵³. A big part of science is recognizing and accounting for all these potential mistakes. Along similar lines, science is not just a search for evidence that confirms your ideas. It's a search for evidence that would disprove your ideas. A big part of science is recognizing when you're wrong.

Science also trains us to think less in terms of absolute certainty, and more in terms of degrees of certainty. If you're being honest with yourself, there's no way to be absolutely certain of anything. It's possible that we're living in *The Matrix*, or hallucinating, and nothing is as it seems. In normal everyday conversation however, we tend to ignore those types of outlandish possibilities, and say that we're positive of something, even if technically we mean nearly positive. There are many things we've learned through science that, using everyday language, we can say we're positive are true. The roughly spherical shape of the Earth, the Earth orbiting the Sun, common descent (if not all the exact lineages and mechanisms), are examples of a few of those facts. We should no sooner expect those facts to be overturned than we should expect to wake up on the Nebuchadnezzar fighting alongside Neo⁵⁴. Other things we've learned through science don't have quite as much evidence. Anthropogenic global warming is an example of this. We can say that we're really darned sure that climate change is happening and that we're responsible, but it's not quite so certain. It would still be really surprising to see AGW turn out to be false, but not earth shattering. You can keep moving down through levels of certainty through things like String Theory, which doesn't really have any evidence confirming it specifically over other theories, but which is at least consistent with known evidence. If string theory turned out to be false, I wouldn't be all that surprised. You can go even further, and find theories inconsistent with known evidence, such as the supposed link between vaccines and autism, or the aether theory of light. We can be pretty sure that those ideas are false.

In addition to making us think in terms of degree of certainty, science also makes us think in terms of degree of accuracy. Isaac Asimov wrote a good essay titled, *The Relativity of Wrong*⁵⁵. Readers are encouraged to read the entire thing, but here's a great quote from that essay, "When people thought the earth was flat, they were wrong. When people thought the earth was spherical, they were wrong. But if you think that thinking the earth is spherical is just as wrong as thinking the earth is flat, then your view is wronger than both of them put

⁵³ http://en.wikipedia.org/wiki/List_of_cognitive_biases

⁵⁴ For those who haven't watched the movie, this is another Matrix reference.

⁵⁵ <http://chem.tufts.edu/AnswersInScience/RelativityofWrong.htm>

together.⁵⁶ An example I've used before is the atom. The current model is the valence shell model, where electrons have a probability of being in particular positions relative to the nucleus. This is an improvement over the Bohr model, where electrons travel in circular orbits around the nucleus and where the orbit radii are defined by quantum mechanics. The Bohr model was an improvement over the Rutherford model (or Solar System model), where the electrons orbited the nucleus, but quantum mechanics wasn't incorporated to predict the orbit radii. The Rutherford model was an improvement over the plum pudding model. And the plum pudding model was at least more accurate than not knowing of the existence of electrons. So, you can see how our explanations have gotten more and more accurate concerning the structure of an atom. Our current model may also be supplanted, but at least we're zeroing in on the truth.

Those are the reasons why we can have confidence in what we learn through science. It's produced results that just wouldn't be possible if the methods didn't work. But it's not simply a matter of thinking that everything science reveals is absolutely right - it's recognizing how science works, what explanations are most likely to be true, and how close we should expect those explanations to be to the actual truth.

⁵⁶ Even if you ignore the deviations from a perfect sphere due to mountains, valleys, and other such features, there is a slight bulge due to the spin of the Earth that's greatest at the equator, making the shape closer to an oblate spheroid than to a sphere.

Pascal's Wager

If you're the type that gets involved at all in religious discussions (and maybe even if you aren't), you've probably heard some version of Pascal's Wager before, even if you haven't heard it referred to as such. The argument is named for Blaise Pascal, a 17th century French philosopher. It appeared in *The Pensées*, a posthumous publication of a collection of Pascal's notes. However, the argument is simple enough that many people have no doubt come up with it independently. So, rather than discuss Pascal's original description of the 'wager,' I'll discuss the version that I've heard most often, personally. (In defense of Pascal, I've heard that he never intended this argument to be concrete logical proof, but rather as a way to get people thinking about the issue).

The argument goes something like this. There either is a God, or there isn't. You either believe in God, or you don't. That gives four possible outcomes (these are traditionally shown in a table, but I'm just going to list them):

1. **God exists & you believe** – You'll get into heaven when you die, an infinite reward.
2. **God exists & you don't believe** – You'll go to hell when you die, an infinite punishment.
3. **God doesn't exist & you believe** – You'll lose nothing (or, according to some, even live a better life).
4. **God doesn't exist & you don't believe** – You can do whatever you want during life, a finite reward.

Presented this way, belief in God would seem to be the choice that offered the least risk. However, there are definitely problems with the argument.

The first problem I'll note is the one that first occurred to me when I was still a Christian – people cannot simply choose to believe in something. Take for example, leprechauns. Many people have sincerely believed in them in the past, but no matter how much I may want to find a pot of gold at the end of a rainbow, I can't make myself believe that leprechauns actually exist. It's the same way with God. If you've given serious thought to the issue, you can't simply make yourself believe (or disbelieve) just because you'd like the outcome. To claim belief in that way would be insincere, and, according to most people's conception of Yahweh, God doesn't merely want lip service. He wants actual, sincere faith.

The second problem I see with the argument is the assumption that you'll lose nothing if you believe in God but he doesn't exist. Assuming you accept that the Bible accurately represents what Yahweh wants of us (which most Christians do), there are plenty of rules in that book. Granted, many Christians have found

Pascal's Wager

ways to rationalize their way out of following a good deal of them (no more dietary regulations, people can work on the Sabbath, many seem to disregard Jesus's lecture about rich people and heaven being compared to camels getting through the eye of a needle, etc.), but there are still quite a few Biblical rules that people do follow. Probably two of the most relevant right now are attitudes toward homosexuals, and attitudes toward stem cell research. The former keeps a large number of people from leading happy lives, while the latter is preventing research with the potential to greatly reduce suffering in the world. One could argue that these are finite costs, compared to the infinite cost and reward of heaven and hell, but they are still costs, nonetheless.

However, the biggest problem with Pascal's wager must be that it leaves out many other possibilities. This becomes clear if you imagine the argument with Allah instead of the Christian God. The argument would then seem to indicate that you should be a Muslim. Obviously, they can't both be right. The problem is in that first statement, that either God exists or he doesn't. It's not a simple either/or choice. There are many, many gods to choose from - three versions of Yahweh (Jewish, Christian, & Muslim - not to mention all the sects of those three), Vishnu, the Bahá'í God, Krishna, the Sikh God, Ahura Mazda, Anu, Ra, Odin, Quetzalcoatl, Gukumat, or Zeus, to name just a few of the deities people have worshipped in the past, or continue to worship in the present (and as an aside, there are many traditions, like Buddhism which don't concentrate on deities).

Also left out are the possibilities of how a god will reward or punish belief and disbelief. The Christian conception of God will reward faith and punish doubt, but with all the possibilities of gods, the other deities may have different ideas. It's conceivable that a god would reward honest inquiry and punish blind faith, favoring the process over the end result.

Even though Pascal's wager may appear clever at first blush, it's unlikely to convince people who have given much thought to the question of the existence of a deity.

Liar, Lunatic, or Lord ... Or Something Else

There's a nice little saying that Christians sometimes use to defend the divinity of Jesus, 'liar, lunatic, or lord'. It's often attributed to C.S. Lewis⁵⁷, though the argument goes back further than him. The reasoning goes that anyone who spoke the way Jesus did has to fit one of those three choices. However, I think they leave off a fourth choice, (in keeping with the alliteration) 'legend'⁵⁸.

The triple L argument (more commonly known as Lewis's Trilemma), implicitly assumes that the gospel accounts are accurate. This is its biggest weakness. Obviously, if you accept the gospels as true, you'll also accept the miracles, such as raising Lazarus from the dead, Jesus's resurrection and ascension to heaven, and the voice of Yahweh declaring Jesus to be his son. If you already accept all those claims, then the triple L trilemma is superfluous. But, if you question those miraculous aspects of the gospels, chances are you'll question the quotes from Jesus, as well.

So, what reason would someone have to question the gospels?

One question I've heard is, if the gospels aren't true, why would people have invented such fantastic stories, and why would others have believed them? First, I think this falls into a common mistake people make, assuming conscious intent where there is none⁵⁹. Just because the gospels may not be accurate, doesn't mean that the gospel writers were intentionally inventing the story. They were merely writing the story that had been passed down to them. Remember that the four canonical gospels weren't written until decades after Jesus's supposed death, so there was plenty of time for his legend to grow. And that's assuming there was a historical Jesus the legend is based on, and that the story wasn't already beginning to develop before the new millennium.

I think there are three good classes of examples to illustrate that it's entirely possible that a story such as the life of Jesus could be fictional. First, just look at modern day urban legends. A browse through Snopes.com, UrbanLegends on About.com, or StraightDope.com, shows just how many untrue things people believe. Most of the urban legends on those sites originated within the past few decades (and many within the past few years), so they show just how quickly an untruth can come to be widely believed.

⁵⁷ http://en.wikipedia.org/wiki/Lewis%27s_trilemma

⁵⁸ I came up with the 'Liar, Lunatic, or Lord... or Legend' alliteration on my own, but clearly, it's a fairly obvious play on words. A little googling found that many others, such as Bart Ehrman, have used this one before me. Oh well. "What has been will be again, what has been done will be done again; there is nothing new under the sun."

⁵⁹ I discussed something similar in a blog entry on the origin of Arabic numerals: http://www.jefflewis.net/blog/2009/10/origin_of_arabic_numerals_was_1.html

You could also look to known legendary figures, such as Robin Hood, King Arthur, or Paul Bunyan. There may be people that these stories were originally based on, but they have certainly moved into the realm of legend, and at this point, it would be nearly impossible to discern whatever kernels of truth still remain.

The final good class of examples is to look around at the world's other religions. Now, one possibility is that they're all mostly right - that there are many, many gods, and they all intervene here on Earth. I don't think most people actually believe that, though (I certainly don't). I think most people look around at the religions other than their own, and assume them to be false. Still, the religions had to come from somewhere. They can mostly be explained by perhaps a few grains of truth, with a lot of exaggeration and embellishment as the stories got passed down - a divine telephone game.

This last class of examples leads into another important point. You have to consider the mindset of the early Christians and the early converts to Christianity. The early church was not trying to win over atheists. It's not as if there were a bunch of skeptics who doubted the existence of gods. The very first Christians were Jews, so they already accepted Yahweh as their god, and it was only a small step to accept that Jesus was his son, the messiah. The gentiles were mostly Romans, who accepted the Roman pantheon. They already believed in many gods, so the hard part of Christianity was limiting their belief to just one. But both of those groups, Jews and gentiles, would have been ready to accept claims of miracles. It fit with their existing worldview. To someone who grew up believing in the labors of Hercules, it wouldn't have been hard to believe that a man turned water into wine or walked on water.

The final point I'm going to discuss, is that outside of the gospels, there is very little independent evidence for Jesus's actual existence, let alone his miraculous acts. In fact, some people doubt whether a Yeshua of Nazareth who became a preacher even existed at all, and think he's entirely mythical. In addition to the lack of evidence, they point to the many commonalities Jesus shared with figures from other religions, particularly Mithraism. Others have conjectured that Jesus may be an amalgamation of several historical figures, with a bit of embellishment, and a bit of borrowing from other religions⁶⁰.

Even if there was a historical Yeshua of Nazareth who served as the original basis for Christianity, I think it's clear that it would have been very easy for his story to be embellished to become the gospels that we're familiar with. So, in addition to the triple L trilemma options of liar, lunatic, or lord, I think we must add at least one more option – legend.

⁶⁰ http://www.religioustolerance.org/chr_jcno.htm
http://infidels.org/library/modern/richard_carrier/jesuspuzzle.html

Book Review – More Than a Carpenter

A book review may seem like an odd item to include in a collection of essays, but the book being reviewed made many claims that I commonly hear from Christians. And this book is fairly popular. The last time I checked, it was ranked decently in Amazon's overall book sales, and was the top seller in a few religious categories. So, this book review makes for a good, brief way to look at popular claims actually being put forward by Christians.

Not too long ago, a friend of mine was in a place of business that had a waiting room (for anonymity, I'm leaving out details of the exact type of business). Among the reading material, he noticed a book titled *More Than a Carpenter* by Josh McDowell and his son, Sean McDowell⁶¹. It's basically an evangelical Christian book, purportedly to convince skeptics of the truth of Christianity. Being a bit cantankerous on religious issues, my friend got into a conversation with the lady behind the counter about the book. She ended up offering the book to him so that he could take it home and read it (and presumably save his soul). Not long after, her boss sent my friend another book, Lee Strobel's *The Case for Christ*, along with a note explaining that he thought it was better than McDowell's book. My friend, knowing my interests, offered to loan me the books, and I, being the glutton for punishment that I am, took them. Having completed *More Than a Carpenter*, I thought I'd share my thoughts on it.

To summarize, the book was bad. Practically every chapter relied on the Gospels being more or less reliable accounts, and then went off defending Jesus's divinity from there. As I've written elsewhere, if non-believers accepted that the Bible was true, we'd already be Christians. But we don't, so citing scripture as proof is nearly pointless. It would be like trying to prove Mormonism by quoting the Book of Mormon, or Buddhism by quoting the Buddhavacana. McDowell only spent one chapter (Chapter 6) trying to make a case for the Gospels being reliable, and didn't really succeed. And without that base, the rest of his book just falls flat.

Chapter 1. My Story

The first chapter was a short description of Josh's background. I can't fault him on that, since many people do that in books like these (I even have a brief background in the book that I wrote⁶²). But his description revealed a shallow, unexamined life. He did say that he went to church looking for answers when he

⁶¹ The version my friend saw and that this review covers is actually an updated version. The original was published in the '70s by Josh as the sole author.

⁶² This book, obviously. I was actually referring to the first edition when I wrote this essay.

was in high school, but the way it was described didn't sound like a very earnest search. When he didn't find the answers or sense of meaning that he was looking for, he quit going. In college, he continued this insincere sounding search for answers by pestering his professors after classes and in their offices. He even said that professors would close their doors and shut the blinds to hide from him. I hope that was just exaggeration, because I know how open my professors were when I was a student. It would have taken a particularly obtuse or arrogant student to get them to actually hide. He also mentioned the obligatory hedonistic partying during his college years.

Josh finally found a Bible study group that showed him the light. But even his description of the group seems strange. He mentioned that one of the girls was attractive, which surprised him, because prior to that he didn't think Christian girls were pretty⁶³. Frankly, this is a little unbelievable considering that he already said he went to church in high school. Was there not a single attractive girl there? Even if his church was particularly homely, 85% of the people in this country are Christian. Did he really think that the only pretty girls were in that remaining 15%?

His background seemed a bit like a clichéd 'I used to be an atheist, but then...' story, with a few outlandish statements making you question his sincerity. He certainly didn't offer anything but shallow reasons for why he was an atheist in the first place.

Chapter 2. What Makes Jesus So Different?

The second chapter was titled 'What Makes Jesus So Different?'. It was his attempt to show that Christ was unique. McDowell argued that only Christ claimed to be God, while Mohammed, the Buddha, and Confucius never made any such claims. He then backed this up with more than 15 pages citing passages from the Bible showing that Jesus did claim to be God and the son of God.

First of all, every religion has some unique aspect differentiating it from other religions. If it didn't, it wouldn't be a separate religion. So, it seems a bit silly to point out a unique aspect of Christianity as if that's proof that Christianity is true⁶⁴.

Second, as I mentioned in the introduction, he was relying on scripture to back up his arguments, before even trying to establish the Bible as reliable.

⁶³ His exact wording was, "So I turned to one of the students, a good-looking woman (I used to think all Christians were ugly), and I said..."

⁶⁴ Though I suppose this may be McDowell's response to critics pointing out Christianity's similarities to other religions.

The biggest problem for this chapter is that McDowell ignored many, many other religions and examples. Children of gods and mortals (demigods⁶⁵) are quite common - Perseus, Heracles, Theseus, Hanuman, and Garuda, to name just a few. Children of gods who are themselves gods are also common. In fact, pretty much every god or goddess in a religion with a pantheon was born of another god and goddess. The Olympian gods and goddesses were all descended from Cronus and Rhea. Osiris was the son of Geb and Nut⁶⁶. And there's no shortage of people who claimed to be gods⁶⁷ (or even people who claimed to be Jesus⁶⁸). Just consider the many such kings or emperors, like those of Egypt, Rome, China, or Japan, or cults of personality like those around Jim Jones⁶⁹ or Father Divine⁷⁰.

It's also worth mentioning the hints of anti-Semitism in this chapter. Numerous times, McDowell mentioned how 'the Jews' killed Jesus. He could have easily written the Pharisees, or the Jewish leaders, but many places it was simply 'the Jews'.

Chapter 3. Lord, Liar, or Lunatic?

I've already discussed the problem with Lewis's Trilemma in another essay, Liar, Lunatic, or Lord... Or Something Else⁷¹. The biggest problem is that people ignore whether or not Jesus was a myth. There may or may not have been an actual historical figure that Jesus of the Bible is based on, but just like Robin Hood or King Arthur, it's entirely possible that much of the story we have now is embellishment.

One quote that caught my eye from this chapter was the following.

Wherever Jesus has been proclaimed, we see lives change for the good, nations change for the better, thieves become honest, alcoholics become sober, hateful individuals become channels of love, unjust persons embrace justice.

In the Wikipedia era, I feel like saying, "Citation needed." I think it might be insightful for McDowell to read the study, Cross-National Correlations of

⁶⁵ <http://en.wikipedia.org/wiki/Demigod>

⁶⁶ Osiris was the Egyptian god of the afterlife, having been killed and then resurrected. For more discussion, see my blog:

http://www.jefflewis.net/blog/2009/01/another_similarity_between_osi.html

⁶⁷ http://en.wikipedia.org/wiki/List_of_people_who_have_been_considered_deities

⁶⁸ http://en.wikipedia.org/wiki/List_of_people_claimed_to_be_Jesus

⁶⁹ http://en.wikipedia.org/wiki/Jim_Jones

⁷⁰ http://en.wikipedia.org/wiki/Father_Divine

⁷¹ In fact, it is the preceding essay in this book.

Quantifiable Societal Health with Popular Religiosity and Secularism in the Prosperous Democracies⁷² by Gregory S. Paul. To quote part of that study:

In general, higher rates of belief in and worship of a creator correlate with higher rates of homicide, juvenile and early adult mortality, STD infection rates, teen pregnancy and abortion in the prosperous democracies... The United States is almost always the most dysfunctional of the developing democracies, sometimes spectacularly so, and almost always scores poorly. The view of the U.S. as a 'shining city on the hill' to the rest of the world is falsified when it comes to basic measures of societal health.

Chapter 4. What about Science?

This was a very short chapter (4 pages), that did little more than reveal that McDowell has a very muddled understanding of science. He seems to think that science requires experiments in a lab, which would exclude astronomy, or any study of the past, from the realm of science. I've seen this type of argument before, and covered it in my essay, Confidence in Historical Knowledge⁷³.

Chapter 5. The Challenge of the New Atheism

This chapter was written by the son, Sean. It started off bad, criticizing the 'New Atheists' for not really offering any new arguments, when in reality, so called New Atheists never claimed to have any new ground breaking arguments. They thought of themselves as merely carrying on in the tradition of previous atheists like Bertrand Russell or Mark Twain. The term 'New Atheism' was coined in an article in Wired magazine, not invented by the New Atheists themselves.

As a small point, he also used an expression that I find especially irksome, describing the New Atheists as 'militant'. Now, I realize that modern atheists may not be as deferential as those from the past, now that religion is losing some of its influence over society. But when Christians actually attack abortion clinics⁷⁴ and plot to kill police officers⁷⁵, while Muslims fly planes into buildings⁷⁶ and riot over the burning of a book⁷⁷, it seems a bit hyperbolic to call atheists 'militant' who merely write books and speak bluntly.

⁷² <http://moses.creighton.edu/JRS/2005/2005-11.pdf>

⁷³ That essay is also included in this book – four essays before this one.

⁷⁴ [http://en.wikipedia.org/wiki/Army_of_God_\(USA\)](http://en.wikipedia.org/wiki/Army_of_God_(USA))

⁷⁵ http://articles.cnn.com/2010-03-29/justice/michigan.arrests_1_militia-six-michigan-southern-poverty-law-center?.s=PM:CRIME

⁷⁶ http://en.wikipedia.org/wiki/September_11_attacks

⁷⁷ <http://articles.latimes.com/2011/apr/02/world/la-fg-afghan-violence-20110403>

In this chapter, Sean showed that he didn't accept evolution. I guess that's not much of a surprise, but it always hurts someone's credibility when they refuse to accept something with so much evidence backing it up.

He did ask a question I've seen before that's worth answering - if our brains are the result of mindless evolution, how can we trust them? The answer is twofold. First, natural selection will favor organisms that have brains that form relatively accurate models of reality. But second, we know we can't entirely trust our brains. They're prone to cognitive biases⁷⁸, illusions, faulty reasoning, etc. Recognizing and working around the faults of our brains is one of the unsung victories of science (you can read more about this in the article, *The Double-Blind Gaze: How the Double-Blind Experimental Protocol Changed Science*⁷⁹, though the focus of that article is medicine).

The chapter trotted out plenty of stale arguments that atheists are used to hearing by now. There were some arguments from consequences, such as saying that atheism leads to worse morality (again, see the study by Gregory S. Paul), or that a universe without God lacks meaning, which I've addressed in detail in other essays. A few of the other 'standard' arguments and complaints from this chapter are listed below, followed by my response.

- *New Atheists focus on Christians over Muslims, Buddhists, or other religions* – This is presumably because most New Atheists live in countries where Christianity is the majority religion. But rest assured, we don't believe those other religions, either.
- *Listing prominent Christian scientists from a few hundred years ago* – European society has only recently begun to shift away from Christianity, so nearly everyone in Europe a few hundred years ago was a Christian. And admitting to atheism a few hundred years ago could get someone burned at the stake, so there weren't many outspoken heathens.
- *Fine tuning of the universe* – Douglas Adams' anthropic puddle argument⁸⁰ is a humorous refutation of this. Additionally, no one knows if a different

⁷⁸ http://en.wikipedia.org/wiki/List_of_cognitive_biases

⁷⁹ http://www.jefflewis.net/double_blind_gaze.html

⁸⁰ <http://talkingincircles.net/2008/07/19/douglas-adams-on-religion-and-puddles/>
"...imagine a puddle waking up one morning and thinking, 'This is an interesting world I find myself in, an interesting hole I find myself in, fits me rather neatly, doesn't it? In fact it fits me staggeringly well, must have been made to have me in it!' This is such a powerful idea that as the sun rises in the sky and the air heats up and as, gradually, the puddle gets smaller and smaller, it's still frantically hanging on to the notion that everything's going to be alright, because this world was meant to have him in it, was built to have him in it; so the moment he disappears catches him rather by surprise. I think this may be something we need to be on the watch out for."

type of universe might have resulted in a different kind of intelligence. i.e. If a different set of laws ruled the universe, there might be very different beings talking of the fine tuning of that parallel universe.

- *Communist China, Communist Russia, and Nazi Germany* – Hitler claimed in public that he was a Catholic, and most Germans who followed him were Christians. And although they were technically atheistic, Russia and China had very strong authoritarian regimes and weren't exactly bastions of free thought. It was almost as if the State was trying to be its own religion.
- *Using Antony Flew⁸¹ as an example of a prominent atheist who converted to religion* – At most, Flew became a deist. And there's some controversy over how much he was influenced and misled as he entered his twilight years and his reasoning wasn't as sharp as it once was.

Chapter 6. Are the Bible Records Reliable?

This was the chapter I was most looking forward to. After more than a third of the book leading up to it, I wanted to see what arguments McDowell had for the Bible being reliable. Because, as I said before, so many of his other arguments rely on it, that this book just falls flat without some justification for accepting the Gospels as more or less true. Unfortunately, this chapter was long on generalizations and arguments from authority, but short on actual evidence.

The truth of the matter is that there are no contemporary accounts of Christ. The most we have now are the Gospels and other books of the New Testament, but none of those were written in Christ's time. The oldest Gospel, Mark, was probably written between 65 and 72 AD, while the other three canonical Gospels were written a few years later, with Mathew and Luke borrowing heavily from Mark's account (McDowell quoted one scholar as placing the Gospels between 50 and 75 AD - a little early, but still not contemporary to Christ). Some of the other books of the New Testament were written earlier (such as Paul's letters), but these weren't written by eyewitnesses and are lacking in actual biographical details. In fact, mythicist theories of Jesus posit that Paul didn't discuss Jesus the man, because Paul and other mainline Christians of the time didn't actually believe Jesus was a man. Rather, they thought Jesus was a heavenly being who struggled in a supernatural realm.

McDowell mentioned textual variants⁸², and rightly pointed out that most are of little consequence to the meaning of passages. However, the sheer number of variants shows that the surviving manuscripts are works of people, prone to making mistakes. McDowell also failed to discuss at all some of the more significant variants, such as the story of not casting the first stone, or the final 11

⁸¹ http://en.wikipedia.org/wiki/Antony_Flew

⁸² http://en.wikipedia.org/wiki/Textual_variants_in_the_New_Testament

verses of Mark, both of which are widely considered to be later additions to those gospels, and not original to them^{83,84}.

He also mentioned that "In the Jewish culture it was important that a teacher's actual words were carefully preserved and passed down", but completely ignored that the Gospels produce at least two sets of last words for Jesus⁸⁵, or possibly three, depending on your interpretation ("My God, my God, why have you forsaken me?", "Father, into your hands I commit my spirit.", or "It is finished.").

McDowell did mention that we have limited manuscripts of other ancient writings, which is true. However, I'm not sure I follow his argument. For example, he wrote:

Caesar composed his history of the Gallic Wars between 58 and 50 BC, and its manuscript authority rests on nine or ten copies dating one thousand years after his death.

Is his point that we have to question *The Conquest of Gaul* because of the late date of the manuscripts? If so, I'd agree. There are doubtless mistakes that have been made during the copying process. Is his point that we should question whether or not Caesar actually conquered Gaul? In that case, I would disagree. There are other contemporary accounts besides Caesar's. There is archaeological evidence.

Later, McDowell wrote:

If one discards the Bible as unreliable historically, then he or she must discard all literature of antiquity.

'Discard' is a strong word, but 'question' is reasonable. Recalling Caesar's *The Conquest of Gaul*, we have to keep in mind that this wasn't just an unbiased historical document. It was a bit of political propaganda to make Caesar look good back in Rome. Modern readers would do well to remember that and question Caesar's reliability when reading the book.

When it came time to list sources of external evidence, he cited Eusebius⁸⁶ quoting Papias of Hierapolis⁸⁷. Unfortunately, Eusebius wasn't writing until the late 3rd and early 4th centuries, and even Papias wasn't writing until the early

⁸³ http://en.wikipedia.org/wiki/Jesus_and_the_woman_taken_in_adultery

⁸⁴ http://en.wikipedia.org/wiki/Mark_16

⁸⁵ http://www.rationalchristianity.net/last_words.html

⁸⁶ http://en.wikipedia.org/wiki/Eusebius_of_Caesarea

⁸⁷ http://en.wikipedia.org/wiki/Papias_of_Hierapolis

2nd century. He also used Iranaeus as an example, but Iranaeus wasn't writing until the late 2nd century. So, none of his examples were contemporaries of Jesus.

When he discussed archaeology, he didn't give any examples of evidence unique to Christianity, only a little general geography. Going back to my Robin Hood example, the existence of Sherwood Forest doesn't lend credence to the myth that the Merry Men lived there.

McDowell also operated under the assumption that early Christianity was more or less uniform. He discussed the books of the New Testament as if they were part of a larger narrative. He just never considered that the different authors might themselves have had different beliefs, nor that there could have been other competing beliefs in early Christianity. Keep in mind the old saying, that history is written by the victors. Early Christians were split into multiple sects. There were Ebionites⁸⁸, Jewish Christians who rejected Paul of Tarsus as an apostate, adoptionists⁸⁹, who thought Jesus was born due to a normal conception and didn't become the son of God until he was adopted at his baptism (Bart Ehrman has argued that Mark was originally an adoptionist work), Gnostics⁹⁰, who were heavily influenced by pagan mystery religions, and others. What we consider mainline Christianity today is composed of the beliefs of the sect that won out.

Throughout the chapter, as well as elsewhere in the book, McDowell tried to indicate that a myth as complex as Christ could not have formed in so short a time. I've mentioned this elsewhere, but just consider the stories you read on Snopes⁹¹. These are legends born in the modern day and age, when we have newspapers and worldwide communication that make it easy to fact check stories. But you still have people who think Obama is a foreigner⁹² who was sworn in on a Quran⁹³, or that George Bush was in on 9/11⁹⁴, or that the Mayan Calendar⁹⁵ predicts the world will end on December 21st, 2012⁹⁶. Some of these modern day legends are quite involved, and have easily had more written about them than is contained in the New Testament. So, it's not difficult to see how a legend about Jesus could have arisen quickly, especially in a time when stories

⁸⁸ <http://en.wikipedia.org/wiki/Ebionites>

⁸⁹ <http://en.wikipedia.org/wiki/Adoptionists>

⁹⁰ <http://en.wikipedia.org/wiki/Gnostic>

⁹¹ <http://www.snopes.com/>

⁹² <http://www.snopes.com/politics/obama/birthers/birthcertificate.asp>

⁹³ <http://www.snopes.com/politics/obama/muslim.asp#quran>

⁹⁴ http://en.wikipedia.org/wiki/9/11_conspiracy_theories

⁹⁵ http://en.wikipedia.org/wiki/2012_phenomenon

⁹⁶ This essay was originally written before that uneventful date.

were spread by word of mouth, and in a time when people were even more open to religious and superstitious explanations.

Rather than write more on the reliability of the Gospels, I'll direct readers to some webpages that discuss this concept, especially the historicity of Jesus. The first reference is especially good. It is a strong case put forth by Earl Doherty for a mythical Jesus, as reviewed by Richard Carrier.

- Infidels.org - Did Jesus Exist? Earl Doherty and the Argument to Ahistoricity⁹⁷
- GodlessGeeks.com - Did Jesus Really Exist? ⁹⁸
- NoBeliefs.com - Did a historical Jesus exist? ⁹⁹
- In His Steps Ministries¹⁰⁰ (This argues for the Bible being accurate, but in my opinion, not very convincingly. It *is* useful for showing many of the ancient documents with references to Jesus. Just be a bit skeptical of their authenticity.)

Chapter 7. Who Would Die for a Lie?

Many Christians were killed in the first and second centuries. That's not really a controversial claim. However, McDowell makes the assumption that those martyrs must have believed in the currently mainstream version of Christianity to have had enough conviction to die for those beliefs. He assumes that if they didn't believe in the Resurrection, then they must have believed Christianity to be a lie, and therefore wouldn't have died for it. This was his way of dismissing all the other religious fanatics who have died for false causes (Jonestown¹⁰¹, Heaven's Gate¹⁰², or the myriad forms of suicide bombers¹⁰³). But, considering how many different beliefs early Christians had, it's entirely possible that the earliest martyrs didn't believe in the Resurrection but were still sincere Christians. It's also possible, considering the previous discussion on how quickly new myths can spread, that those martyrs did believe in the Resurrection, especially by the late first century.

This chapter also assumes that all the accounts of the apostles are accurate. It would be a bit like using the behavior of Little John or Will Scarlett to try and defend the historicity of Robin Hood. He doesn't entertain the idea that they could all be part of the same myth.

⁹⁷ http://www.infidels.org/library/modern/richard_carrier/jesuspuzzle.html

⁹⁸ <http://www.godlessgeeks.com/JesusExist.htm>

⁹⁹ <http://www.nobeliefs.com/exist.htm>

¹⁰⁰ <http://www.creatingfutures.net/skeptic.html>

¹⁰¹ <http://en.wikipedia.org/wiki/Jonestown>

¹⁰² [http://en.wikipedia.org/wiki/Heaven's_Gate_\(religious_group\)](http://en.wikipedia.org/wiki/Heaven's_Gate_(religious_group))

¹⁰³ http://en.wikipedia.org/wiki/Suicide_bomber

In this Chapter, McDowell mentioned Josephus and Origen (I would have expected those in the last chapter), but without actually quoting what those historians wrote about Jesus. This is a bit surprising, since Josephus is just about the best evidence there is for there actually being a historical Jesus (though even Josephus didn't mention Jesus in writing until around 93 AD). The passage now known as the Testimonium Flavianum is the most explicit description of Jesus in Josephus's Antiquities of the Jews, but its authenticity is rather dubious. Many historians consider it to be a forgery inserted by later Christians (or at the very least, that the passage has been heavily altered). However, there is another passage, considered more likely to be authentic, which reads:

Festus was now dead, and Albinus was but upon the road; so he assembled the sanhedrin of judges, and brought before them the brother of Jesus, who was called Christ, whose name was James, and some others...

That's just about the earliest mention of Jesus independent of the Gospels (there are still no contemporary accounts). However, it's worth considering that Josephus also discussed Hercules (though in a slightly different manner).

Another argument from this chapter was that the rapid spread of Christianity, even after Christ's crucifixion, was an indication that it must have been true. By that same logic, we should consider that Scientology¹⁰⁴ might have some merit.

Chapter 8. What Good Is a Dead Messiah?

McDowell here at least admitted that many people die for their beliefs all the time, but then he tried to argue that the Jewish understanding of the Messiah would have made people lose hope if he had simply died, and they would have abandoned the movement. So, this chapter is simply a case of special pleading - Yes, people die for false beliefs all the time, but Christians wouldn't have done the same thing.

It's also worth mentioning here the failed prophecies of Jesus, such as Matthew 24:34 ("I tell you the truth, this generation will not pass from the scene until all these things take place.") or Luke 9:27 ("I tell you the truth, some standing here right now will not die before they see the Kingdom of God."). Obviously, those failed prophecies haven't kept people away from Christianity. In the same way that people rationalize those, I'm sure early Christians could have found ways to rationalize the death of their prophet (if he did indeed exist) in an era before the myth had grown to what it is today.

¹⁰⁴ <http://en.wikipedia.org/wiki/Scientology>

Chapter 9. Did You Hear What Happened to Saul?

This chapter dealt with Paul of Tarsus. He described Paul's vision on the road to Damascus, and his subsequent conversion and change in personality, and considered Paul's change as evidence that his vision was real.

In a chapter on the importance of Paul's visions, you'd think McDowell could have addressed the contradictions. Why does Acts 9:7 ("The men with Saul stood speechless, for they heard the sound of someone's voice but saw no one!") not agree with Acts 22:9 ("The people with me saw the light but didn't understand the voice speaking to me.")?

This chapter included a passage I might have said myself when I was still a Christian, but now, it seems baseless to me. It's merely stating that the Crucifixion forgave humans of their sins without explaining why (McDowell tried to address this in Chapter 12, so I'll come back to this).

Paul came to understand that through the Crucifixion Christ took the curse of sin on himself for us (see Galatians 3:13) and that God "made Christ, who never sinned, to be the offering for our sin, so that we could be made right with God through Christ" (2 Corinthians 5:21). Instead of seeing the death of Christ as defeat, he saw it as a great victory, completed by the Resurrection.

Chapter 10. Can You Keep a Good Man Down?

This chapter dealt with the empty tomb after Christ's crucifixion. McDowell assumed that nearly everything described in the Gospels is true, and argued against alternative explanations for how the tomb could have turned up empty (women and disciples checked the wrong tomb, disciples hallucinated, Jesus had merely fainted instead of died, the body was stolen by the disciples, the body was moved by authorities without the disciples knowing it). He only briefly addressed that the whole thing could have been invented. In two pages, he dismissed the idea that Jesus's resurrection could have been copied from other mythologies, such as Osiris or some mystery religions. He relied almost entirely on arguments from authority, quoting Paul Rhodes Eddy & Greg Boyd, and T.N.D. Mettinger.

The remainder of the chapter was one long appeal to authority, quoting lawyers (not archaeologists or historians) who believed that the Resurrection was a true event.

Chapter 11. Will the Real Messiah Please Stand Up?

This chapter dealt with the prophecies fulfilled by Jesus. I have one small gripe - he listed chapter and verse for several of the prophecies, but not the text of the

prophecies themselves. It would have been nice to be able to read the prophecies without looking them up in another source.

He did mention one possibility I hadn't thought of before - that since Jesus was familiar with many of the prophecies, that he would have tried to fulfill them. McDowell dismissed this because some prophecies would have been beyond Jesus's control. But, as I've said for just about every chapter, he never entertained the idea that the gospels could have been fabricated, and that maybe the reason it appears that Jesus fulfilled so many prophecies is because the Gospel writers wrote it that way. (I don't necessarily mean intentional fabrication, though that is possible. Rather, in the repeated retellings of the story before the Gospels were written, Jesus might have been made to fulfill more and more prophecies.)

He focused a bit on genealogy, but never even addressed the discrepancies between Jesus's genealogies given in Matthew and Luke¹⁰⁵.

McDowell also never addressed failed prophecies, or misinterpretations. For example, Isaiah 7:14 states:

All right then, the Lord himself will give you the sign. Look! The virgin will conceive a child! She will give birth to a son and will call him Immanuel (which means 'God is with us').

The problem is that 'virgin' is a mistranslation of 'young woman'. Further, Jesus is never referred to as Immanuel in the New Testament except when the writers are referencing this prophecy.

As another example, Zechariah 11:12 states:

And I said to them, "If you like, give me my wages, whatever I am worth; but only if you want to." So they counted out for my wages thirty pieces of silver.

But Matthew 27:9-10 incorrectly cites Jeremiah for this prophecy:

This fulfilled the prophecy of Jeremiah that says, "They took the thirty pieces of silver—the price at which he was valued by the people of Israel, and purchased the potter's field, as the Lord directed."

There are all the other failed prophecies of the Bible, but those above are specific to prophecies about Jesus (for general examples, see the Skeptics Annotated Bible¹⁰⁶, RationalWiki¹⁰⁷, or the Secular Web¹⁰⁸).

¹⁰⁵ http://en.wikipedia.org/wiki/Genealogy_of_Jesus

Chapter 12. Isn't There Some Other Way?

This chapter was an attempt to explain why acceptance of Christ is necessary for salvation, and why you can't just be a good person. I think the following passage is a good representation of his argument.

When Jesus was executed on the cross more than two thousand years ago, God accepted his death as a substitute for ours. The just and righteous nature of God was satisfied. Justice was done; a penalty was paid.

In truth, I think that's barbaric. Even if a sense of justice *demand*ed a penalty, what is 'just and righteous' about killing a scape goat to forgive others? It makes no sense.

Chapter 13. He Changed My Life

This last chapter explained how horrific McDowell's life was before (drunk abusive father, sexual abuse from farmhand, an empty hedonistic lifestyle, anger, etc.), and how much he'd changed for the better after accepting Christ. For all I know, McDowell may be a better person now that he's a Christian, but there are many other possible explanations to consider (such as the social support structure of a church) before jumping to the conclusion that Christianity is true.

After thinking it over, I think there are two big problems with the book. First, as I've repeated many times throughout this review, McDowell took the Bible at more or less face value, and never seriously considered that the stories might be myths. But a separate problem that I never discussed is that many of his arguments were focused so narrowly on Christianity, that he ignored the larger context of other religions. Of course Christianity has some unique aspects, but the types of arguments McDowell used could be adapted to other religions with very little change. For example, Thich Quang Duc's self-immolation¹⁰⁹ shows a *very* strong commitment to Buddhism, but is no more proof of the truth of that religion than the early Christian martyrs is of Christianity.

The back cover of the book has the following lines (punctuation and capitalization copied faithfully).

¹⁰⁶ <http://skepticsannotatedbible.com/proph/long.html>

¹⁰⁷ http://rationalwiki.org/wiki/Failed_biblical_prophecies

¹⁰⁸ http://www.infidels.org/library/modern/farrell_till/prophesy.html

¹⁰⁹ http://en.wikipedia.org/wiki/Thich_Quang_Duc

Book Review – More Than a Carpenter

read the story. weigh the facts.
experience his love.
and then watch what happens.

I'm still awaiting a book that actually presents this evidence, because McDowell didn't do so here. This book won't convince anybody who's given serious thought to the question of Christianity, and doesn't even present any particularly thought provoking arguments.

How Monotheistic Is Christianity?

Christianity claims to be monotheistic (as do the other Abrahamic religions). It's right there in the first commandment. But if it weren't for the Christians' own insistence on this term, would people really label Christianity as monotheistic?

I'll ignore the trinity for this discussion. The father son relationship would certainly seem to suggest at least two deities, but let's just accept the Christian explanation, and assume that they're different manifestations of the same god.

Let's start off looking at the Catholic saints. There are patron saints for everything, from various illnesses, to occupations, to places. I remember when my wife and I were selling our house, my sister-in-law suggested we bury a statue of Saint Joseph in our front yard. These characters are deities in all but name.

But not all sects of Christianity accept the saints, so let's move on to another character from Christianity - Satan. Here's a being so powerful that he was able to fight a war against Yahweh. He has his own kingdom, Hell. And many sects of Christianity believe that he's powerful enough to influence events in the universe, and that he's going to wage another war against Yahweh at some point in the future.

Most Christians also believe in angels and demons. Archangels are even mentioned by name in the Bible and other religious texts, such as Michael, Gabriel, Luke, Raphael, Uriel, Metatron, and Azrael. Many Christians also accept the concept of guardian angels. So, while the angels may not be as powerful as Yahweh, they do have powers that they can use to influence the world.

Stepping away from Christianity, consider the Greek pantheon. Gaia was the first deity, from whom all the other gods came. After the war between the Olympian Gods and the Titans, there were only three main gods who shared control of the universe - Zeus, Poseidon, and Hades. Yes, there were other lesser gods, but they all answered to those three. It seems like this is fairly comparable to Christianity. There are two primary gods, Yahweh and Satan, and all the lesser gods answer to them. The biggest difference seems to be that Yahweh isn't just a powerful god, he's also the creator god. But other polytheistic religions also have the creator god as the most powerful one (such as Vishnu's role in Hinduism).

Considering all this, it seems that calling Christianity a monotheistic religion is mostly an issue of semantics.

What's the Point of Intercessory Prayer?

When my daughter was younger, we were attending one of her Girl Scout award ceremonies. As is pretty common for these things, her troop met at a church. The room where we had the ceremony was also a meeting room for one of the Sunday school classes, and one of the walls had a section for "Prayer Requests," where students put up little notes with things they'd like the congregation to pray for¹¹⁰.

One of the girls, I'm assuming one who hasn't been exposed to church too much, asked what the "Prayer Requests" wall was about. The troop leader explained it to her, but I had a thought that made me smirk a bit, and bite my tongue not to say out loud - because God wouldn't know those people were having problems unless he heard about it through prayer.

When you stop and think about it, if you believe that your god is all knowing and all powerful, then intercessory prayer really is a weird thing. Sure, it makes sense if you believe in imperfect or fickle gods, who may or may not follow the daily events of our personal lives, and who may or may not care what happens to us. But that's not the type of god most Christians believe in.

Most Christians I know believe that Yahweh is omnipotent, omniscient, and that he has a perfect plan for us. If that's the case, what could you expect to achieve through prayer? Yahweh already knows what's going on - he doesn't need earthly informants. It's not as if it's a popularity contest, and Yahweh's going to count votes to determine his divine intervention. And it really is less than humble to ask the almighty to change his divine plan simply because you don't like it. The plan is supposedly perfect, after all.

I can understand other types of prayer - praise, thanksgiving, asking for strength for yourself. But when it comes to intercessory prayer, it seems a bit, well, odd.

Anyway, these aren't terribly original thoughts. But, the more and more I've been outside of Christianity, the stranger and stranger some of those old habits seem.

¹¹⁰ I don't mean to belittle the actual topics of most of the prayer requests. There were definitely some serious issues on that wall.

Reasons for Strong Atheism

When I first became an atheist, it was of the sort that people call 'weak atheism', and some would even have referred to it as agnosticism. Now that I've had some time to become comfortable with the idea that there aren't any deities, I've moved from the position that a god is a possibility simply lacking in evidence, to the position that gods really are pretty unlikely, and almost surely don't exist.

In a particular essay I wrote shortly after becoming an atheist, I summarized my position on deities and souls as follows.

To clarify my position on religious matters at the time of writing this essay, I'm not absolutely one-hundred percent certain about anything. However, I'm about as sure that the Earth is a globe that orbits the Sun as I am that the Bible was written by people, and that a God as presented in the Bible doesn't exist. I'm not as certain that no type of divine being exists at all. I don't see an absolute reason why there would have to be one, but that doesn't mean that there isn't one, or that a super powerful being didn't come into existence after the universe did. I'm also open to the idea that we have souls and will experience some type of afterlife. So, I may not buy into the arguments of Christianity, anymore, but I haven't rejected a spiritual aspect of the universe, altogether.

That certainly sounds sensible. So what's changed?

To start off, maybe I should begin with discussing certainties. In a philosophical sense, we can't be 100% sure of anything. There's always some small finite chance that whatever we think we know is wrong. The common arm chair philosopher argument is to ask how we can be sure that everything we know isn't just a dream, or a hallucination. Practically speaking, however, some scenarios are just so unlikely that their probability becomes infinitesimally small. So, while we admit that in a philosophical sense they have some finite probability, we live our lives as if they're impossible. No one goes to bed at night worried that gravity will quit working and that they'll wake up in space. So, when I wrote above that deities almost surely do not exist, it's only in that philosophical sense that I grant that they might.

Let me digress one more time before getting to the main point. Let me explain just why I was religious before I became an atheist. It really had very little to do with evidence, and very much to do with emotion and tradition. I'd been brought up going to church, and having authority figures tell me over and over how important it was to be religious, and how important it was to have faith. Even certain parts of the Bible stress how important it is to have faith without

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evidence (recall the story of doubting Thomas from John 20:29, or Jesus being tempted by Satan and replying that you shouldn't put God to the test from Matthew 4:7). I think the following comment I made on a blog during a discussion when I was still Christian shows just how much I valued faith over evidence.

I don't think it's a sign of personal weakness to believe in God. Knowing all that I know about science, it takes a lot of faith to accept the Bible. To me, that's more of a strength than a weakness.

I knew all along that I didn't have much evidence to support my religious beliefs, but I didn't let it shake my faith. In fact, the only 'evidence' I had for the divine were a warm fuzzy feeling that I assumed to be God's presence, and a very minor miracle that I personally witnessed (an object I'd lost turned up in a place where I was *positive* I'd checked very thoroughly). I knew all along that both of those forms of evidence were very shaky, and could very easily be explained through non-supernatural causes. I counted them as evidence because I *wanted* to believe, not because I thought they were strong evidence.

The reason I bring all this up is to reinforce that there really is no strong evidence for the divine. I've covered this in much more depth in other essays, but even when my faith was strong and I had no reason to doubt any evidence supporting a deity, I just didn't see it.

When I first became an atheist, it was through a rational approach. I recognized how little evidence there was for gods, and I realized I was a Christian mainly through accident of birth, and didn't have any real reason to choose it over any other religion, so I was left with atheism as the only honest choice. But those emotional reasons that kept me a Christian for so long were harder to shake than any logic. Remember, the type of god that most Christians believe in isn't the fire and brimstone version from the Old Testament, it's the 'God is love' version you learn in Sunday school. I didn't like to lose that eternal protector, and I wasn't yet ready to give up the promise of an afterlife, so that's why I clung to a god as still being a possibility, even though there wasn't any evidence.

Going back to a rational approach, even if Christianity wasn't the result of Yahweh intervening with his creation, it still had to come from somewhere. One interesting observation is that nearly every culture has a religion, nearly all of which include deities. It's pretty unlikely that religion has been invented out of thin air independently in each of those cultures. There are a few options that seem much more parsimonious - 1) that there actually is something to religion, and all these myths are attempts to explain some mysterious force in the universe (think the fable of the blind men and the elephant), 2) there's something about human nature that makes people keep inventing religion, 3) religion was

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present in the common ancestral group of all modern humans and has been passed down, being modified along the way (similar to language).

Another interesting observation is that, not just do many cultures have religion, but the deities in these separate religions serve similar, specific functions. For example, the Greek goddess, Ganymede, the Norse god, Thor, the Aztec god, Tlaloc, the Mayan god, Chac, and the Egyptian god, Tefnut, are all gods of rain. The cultures all believed that rain was explained by the existence of these gods. It's a similar case in other cultures, and for many different phenomena. This would seem to indicate that the first of the three options above isn't true. It's not some mysterious force that early religions described – it was unexplained natural phenomena.

It seems probable that the reason all cultures have religion is down to the latter two reasons from above, and quite probably a combination of the two. Curiosity is part of human nature, as is a tendency to imagine agency where there is none. This could have very easily led early humans to conjecture that supernatural forces were controlling aspects of the universe that they couldn't yet explain. As people spread across the world and religious traditions were passed down from generation to generation, the slight differences in isolated groups led to the various religions that we have today.

Judaism (and hence Christianity), being monotheistic, may seem a bit different than the polytheistic religions. However, the earliest roots of Judaism appear to be from a prior Canaanite religion¹¹¹, with an entire pantheon of gods. The exact history of how Yahweh became the only god worshipped in Judaism isn't entirely clear, but seems to have gone in stages where Yahweh originated as a storm god, then became the most important god ruling over the other gods, and finally the only god in that religion¹¹². Certainly, some passages in the Old Testament hint at these polytheistic origins (the use of 'we' in Genesis, the worship of other gods, etc.) And certain stories from Judaism are certainly from earlier cultures, such as Noah's flood being a rehashed version of the Mesopotamian Flood Myth¹¹³. Many aspects of the Old Testament also read as just so stories explaining why the universe is the way it is - going back to what I mentioned above about religion providing explanations for unexplained natural phenomena.

It certainly seems that religion was invented by our ancient ancestors, not as a deliberate fabrication, but like I said, as an attempt to explain nature. The very concept of gods is part of that invention. That is very important, so let me repeat it - the very concept of gods is an invention of human mythology.

¹¹¹ http://en.wikipedia.org/wiki/Judaism#Critical_historical_view

¹¹² <https://en.wikipedia.org/wiki/Yahweh>

¹¹³ <http://en.wikipedia.org/wiki/Atra-Hasis>

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So, there are two key points from what I wrote above - there is no evidence for any gods, and the very concept of gods is a human invention. Given those two points, it seems almost certain that gods don't exist. It's a bit like unicorns, leprechauns, or fairies. Gods are just another set of mythical beings. We don't go around saying that gnomes are a remote possibility simply lacking in evidence - we rightly say that gnomes are products of our imaginations and never really existed. Why, when it comes to a different invention of human mythology, do so many people say that it's something we can never know for certain, or that deities are outside the realm of investigation, or that it takes faith to think they aren't real? These are things I would have said myself when I was still Christian, but now I recognize them for the double standard they are.

Standards of Evidence for Religion

I've often written that I could be convinced of a religion given enough evidence. I suppose it would be fair to discuss just what that evidence would be.

Basically, anything that could be defined as truly miraculous would count as evidence toward a god. This includes fulfilled prophecies, occurrences that are counter to the laws of nature, direct manifestation of the divine, a scripture that contained knowledge that couldn't have been known at the time it was written, etc¹¹⁴.

However, there are many caveats. First, the evidence that the miracle occurred must be strong and convincing (as Carl Sagan said, "Extraordinary claims require extraordinary evidence.") For example, consider the case of Prahlad Jani¹¹⁵. He's an Indian yogi who claims that he's gone 70 years without eating or drinking. A doctor has even performed some tests, observing Jani for 9 days in a hospital, supposedly without food or water, thereby confirming the claims. Unfortunately, the tests are questionable. The doctor didn't use the best methodology, and he wouldn't let another investigator who had experience exposing frauds be involved in the study. From the best information that outsiders have been able to gather, it appears that Jani's just a normal person, who had been eating normally up until his time in the hospital, and then began suffering from the effects of dehydration and starvation while he was there.

As another example, consider Ram Bahadur Bamjan¹¹⁶, who some claim is the reincarnation of the Buddha, and who others claim (since according to Buddhism, *the* Buddha has already achieved nirvana) is a Bodhisattva. Bamjan has supposedly sat under a tree meditating for months on end, with no food or water. However, there's no good evidence to back the claims up. There was even a screen put in front of him every night, hiding his actions. When the Discovery Channel sent a film crew to make a documentary, they couldn't detect his heat with an infrared camera the first night they tried (makes you wonder if he'd been leaving every night all along). On a second attempt, they did observe him to go without food for 96 hours, but while four days of fasting is a feat, it's hardly miraculous.

¹¹⁴ The website, Ebon Musings, has a page titled *The Theist's Guide to Converting Atheists*, which contains a similar discussion, and was a sort of springboard for this essay.

¹¹⁵ http://www.esowatch.com/en/index.php?title=Prahlad_Jani
<http://www.skeptdic.com/skeptimedia/skeptimedia90.html>

¹¹⁶ <http://www.foxnews.com/story/0,2933,450564,00.html>
http://en.wikipedia.org/wiki/Ram_Bahadur_Bomjon#Feats_of_inedia

Standards of Evidence for Religion

So, the evidence that the miracle occurred must be strong and convincing. It can't be merely hearsay.

As another caveat, the miracle really should be something that's unexplainable by natural processes. This rules out those events that fall into the realm of unlikely, but not impossible. While my chances of winning the lottery may be a million to one, somebody still manages to win every week. In other words, given enough opportunities, unlikely events will inevitably happen to someone. I think one of my favorite examples of such an unlikely event is a pickup truck that nearly went over a cliff in Utah, but ended up landing on a small ledge just to the side of the road. You can see the pictures and read about it on Snopes¹¹⁷. Unfortunately, vehicles fall off cliffs all the time. So, as lucky as it may have been for the driver of that pickup to land where they did, it was just the odds playing out. If, say, vehicles with Jews never went over cliffs, while vehicles with non-Jews went over regularly, then there might be something to God protecting his chosen people. But in reality, religious affiliation has no effect on your chances of death by precipitous plunge.

Another example comes from Our Lady of Velankanni Church in Mumbai¹¹⁸. The church had a crucifix where water dripped from the feet of Jesus on the cross. People took the dripping water to be a miracle from God, and collected the holy water to cure their ailments, sanctify their homes, or whatever else it is that people do with such things. When a skeptic, Sanal Edamaruku, investigated the statue a few weeks after the miracle was discovered, he found that it was caused by a clogged drainage pipe and some capillary action transporting the water. (This incident also reveals a darker side of organized religions. For his 'crime' of exposing this miracle, the Catholic Archdiocese of Bombay filed charges against Edamaruku under India's version of blasphemy laws, and Edamaruku was forced to flee the country.)

Other, stranger seeming 'miracles', can also be explained naturally. Speaking in tongues¹¹⁹, or glossolalia, appears very strange - speakers making vocalizations that they're convinced are other languages. However, as it's been studied, it's been learned that the speakers are using sounds that they're already familiar with from their own language (e.g. a native English speaker won't make the guttural vocalizations of German or French). Further, to quote the Wikipedia article, "where certain prominent glossolalists had visited, whole groups of glossolalists would speak in his style of speech." This certainly makes it appear that it's a learned behavior. I doubt that the speakers are intentionally lying, but I also doubt that they're doing anything more than making interesting noises.

¹¹⁷ <http://www.snopes.com/photos/accident/culvert.asp>

¹¹⁸ http://www.slate.com/articles/health_and_science/new_scientist/2012/07/a_statue_of_jesus_oozing_holy_water_an_indian_skeptic_debunks_miracle.html

¹¹⁹ <http://en.wikipedia.org/wiki/Glossolalia>

Faith healing¹²⁰ is an example that requires both above caveats. First, I'd need to see some strong evidence that a person was actually healed (and that the supposed event wasn't a fraud). Of the many examples of people who think they've been healed, most can probably be chalked up to self-hypnosis or the placebo effect. A person gets caught up in the moment, and subjective symptoms are reduced. There are probably also cases where a person does get better after visiting the healer, but most of those are likely to be coincidence. i.e. There's no guarantee that the cure came from the healer, as opposed to just occurring spontaneously, which does sometimes happen. Really, what would be needed is some type of study involving a control group, to see just how effective faith healing really is (though I doubt many researchers would be willing to deny patients real treatment for such a study).

Another consideration is that many claims for the divine cross religious borders. If a Christian and a Hindu have both claimed to have felt a god's presence, or to have received a divine message, which one of them should we trust more? Should the Christian and Hindu evidence be counted equally? Doesn't it seem more likely that it's really all in their heads? If supposed miracles occur just as often for diverse people regardless of their religion, then it doesn't argue strongly for their particular religions. This does leave open the possibility of a non-denominational god, but it seems more likely that there are more earthly causes that are being misinterpreted.

Prophecy requires special mention. Of course, these require the same standard of evidence as other miracles. Pointing to a prophecy in an old book, and then pointing to another section of the same book that says the prophecy was fulfilled, isn't very convincing without independent sources confirming the claims. But for prophecies to be convincing, they must also be specific. Nostradamus's writings are an example of how bad this can be. When every generation can interpret a prophecy to be applicable to events happening in their own time, then the prophecy probably isn't specific enough. Prophets must also have a decent accuracy. As the saying goes, even a broken clock is right twice a day. If someone throws out enough prophecies, some are bound to come true. Prophecies must also be unlikely, or something that would be very difficult to predict otherwise. It's not very profound to prophesize that the next round of presidential candidates will lie during their campaigning.

Ideally, miracles should be witnessed by more than one person. Personal revelations fall into this category, especially considering, like I wrote above, that people from diverse religions are all convinced that they've personally felt their god's presence. An example is the case of Adele Brise¹²¹. She claims to have

¹²⁰ <http://www.skepdic.com/faithhealing.html>

¹²¹ http://www.shrineofourladyofgoodhelp.com/htmlPages/g_hst_p3.html

Standards of Evidence for Religion

seen and spoken to an apparition of the Virgin Mary. The thing is, there were two other women with her, neither of whom could see Adele's vision. Despite the unverifiable nature of the event, the Catholic Church has officially decreed "these apparitions as worthy of belief". There are many reasons a person could claim to see apparitions or hear voices. The simplest, though I like to hope the least common because I like to think the best of people, is that they're simply lying – looking for attention, a way to make a buck, or even just playing a joke¹²². But there are also people who really do have mental problems, who have hallucinations or hear voices in their heads. Just because some of them claim the voices are coming from on high doesn't mean that we shouldn't give them the appropriate treatments they need.

Assuming that a miracle did meet the appropriate standards, I can say that I still wouldn't be convinced by a single example. There are too many other possible mechanisms. For example, let's imagine that a prophet came along who truly could predict the future. It's possible their insights were divine, but it's also possible that seeing into the future was an ability of humans, and that most people simply aren't very good at it. I would want to see research done into where the prophet's ability came from. I wouldn't immediately jump to accepting their religion.

There are other possibilities that may seem outlandish, but no more so than Thor being a real deity. As Arthur C. Clarke wrote, "Any sufficiently advanced technology is indistinguishable from magic." It's a big universe out there, and it's possible we're not alone. Sci-fi shows like *Star Trek* make us want to think that advanced civilizations would be noble and peaceful, but we don't know that they would. Maybe a civilization wanted to conquer our planet, but their space ship didn't have the resources to do it outright. A few magic tricks to impress the natives would go a long way. Or maybe aliens would be practical jokers, having a bit of fun at the primitive apes' expense.

An important consideration here is the timing of miracles. As far as I've seen, there haven't been any well documented miracles, but even the *claims* of miracles show a decrease in grandeur over time. In Genesis 3:8, God literally walked with Adam and Eve. He didn't hide his presence. Moses parted the Red Sea. The walls of Jericho came a tumblin' down. Jesus walked on water and healed the blind and the lame. The disciples spoke in tongues. The miracles in the Bible aren't subtle. But as we've learned more and more about the universe around us, and as documentation of events has become better and better, miracles have become more and more minor. Why would God change his modus operandi in modern times? If there truly were a god, it wouldn't have to be that way. A god could continue performing major miracles throughout the

¹²² Such as the Cottingley Fairies - http://en.wikipedia.org/wiki/Cottingley_Fairies

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ages. It seems likely that many supposed ancient miracles are myths, and many more are due to people not understanding how the universe really works.

Once you weed out the myths, hoaxes, and other explainable phenomena, there aren't any well documented miracles, which I think can be extended safely to say that there haven't actually been *any* miracles. But this brings up another issue - considering the dearth of true miracles in the past, the source of any new 'miracles' would have to be carefully considered. In other words, if a supposed god were to suddenly reveal itself, we would have to ask, 'why now?' It would benefit us to be especially skeptical, and consider all the possible alternative sources of that revelation.

This discussion of miracles is far from exhaustive. There are other classes of miracles that weren't included, and many more specific examples. But I think that this gives a sense for the standards that would be convincing to a skeptic. Miracles must be well documented, not explainable by natural means, and more than simply unlikely events. And even if a supposed miracle was well documented, we must consider other possibilities before accepting it as evidence for any particular religion.

Am I Religious?

Am I Religious?

Well, no. But if somebody were to ask me that question, and I gave them that simple answer, I think it would be easy for them to have a misconception about me.

When I was younger, if I heard that somebody wasn't religious, I'd assume that either they believed in God, but just didn't like going to church and following the rules, or that spiritual concerns seemed a little too abstract to them, so they'd rather focus on the physical world, or they just didn't really care about spiritual/philosophical questions at all. I guess this is a bit of projection, but I'd assume that's the way a lot of people take it when they hear somebody isn't religious.

But even though I'm not "religious," it doesn't mean I don't care about those questions. I didn't become an atheist just because I didn't like going to church Sunday mornings, or because I didn't want to have to follow the rules anymore. I read the Bible. I studied science. I read up on philosophy. I became an atheist because that's the way I think the universe really is.

I want to know the Truth, with a capital "T." I want to know how old the universe is; how our solar system was formed; the history of life on this planet; whether archaeopteryx was a direct ancestor of modern birds, or a member of a lineage that went extinct¹²³. I want to know how the universe works; if the Higgs boson really is responsible for mass; what dark matter is, if it even exists at all; what exactly is the smallest subatomic particle. Do we have souls? Who's right - the materialists or the dualists? When I die, is that it, or will a part of me continue to exist, and what would that existence be like? Are there ghosts? If we don't have souls, what is it that gives us our experience, and what else in this universe besides animals can experience its existence? Does the sun have a sensation of its nuclear fusion? What goes through an ant's mind?

How should I be living my life? How much of my time should I spend helping others, and how much should I worry about making myself happy? How do I decide who to help? Where should I be volunteering my time? The past two years, I've spent a week in Guatemala helping Mayans at a hospital, but I used up all my vacation time to do so, so I didn't take my daughter on any big trips. My wife and I have now decided not to go on those mission trips for a little while so we can focus more time on our daughter. Did we make the right

¹²³ Actually, archaeopteryx was almost certainly in a lineage that went extinct, but I chose an example that I would hope most people have heard of.

Am I Religious?

choice? I feel guilty not helping those people now, but I felt like I was neglecting my daughter before.

When I look at the world around me, I'm struck by its beauty. I can't see a bird on the wing without stopping in my tracks to watch it. I look up at the night sky, and I'm awe struck by just how big the universe is, and how much is out there, and how strange and wonderful it all is. I still watch all the specials on the Discovery channel - even when I'm not learning anything new, I love to see the beauty of the universe.

So no, I'm not religious. I don't believe in the Christian God, or Jesus, or any of the other gods of other religions, or their myths about how the world works, or how the world was created. And I'm not going to follow arbitrary rules and dogma just because a book tells me to. But I still wonder about all the same big questions I wondered about when I was religious. I still want to know how everything works, and why things are the way they are. And I still see all the beauty in the world around me.

Appendix – Other People’s Comments from Various Blogs

From time to time, I'll run across a comment on a blog that expresses a sentiment nearly perfectly. Here are a few of those comments (obviously written by people other than me). Some of them deal with evolution, which as I've written elsewhere, doesn't necessarily conflict with Christianity, but was one of my first seeds of doubt concerning my religion, and is certainly part of a cultural conflict in this country right now.

Evolution, Gravity & Hammers

source:

http://scienceblogs.com/pharyngula/2006/08/put_the_blame_where_it_belongs.php#comment-190919

Posted by: eohippus | August 11, 2006 11:28 AM

Seeing a hammer fall is evidence of gravity on the small scale, in exactly the same sense that seeing bacteria develop antibiotic resistance is evidence of evolution on the small scale. There are people who say that the sun orbits the earth, because on the large scale, gravity works differently, or doesn't work at all. We can't set up an experiment in a lab to test whether planets orbit stars, so we have to rely on indirect observations of planetary motions to prove that gravity works on the large scale as well. By dropping a hammer, you're doing nothing to prove gravity on the large scale.

Saying that we can't make a repeatable experiment that allows us to observe 'macroevolution', therefore it must be a religious belief, is no different from saying that heliocentrism is a religious belief, because we can't test that either. But using indirect evidence, like the fossil record, genetic evidence, planetary motions, etc. is just as scientific.

Eucharist to an Eskimo

source:

http://scienceblogs.com/pharyngula/2006/12/the_courtiers_reply.php#comment-299077

Posted by: Keith Douglas | December 26, 2006 12:14 PM

I remember hearing a story from an Inuit friend of mine who when she first attended a Catholic mass heard this guy standing in front of a bloody statue that we should eat of a person's flesh. To an Inuit, like to most humans not god-soaked, cannibalism is at best a last, desperate act of the desperately starving. To ask people to do it when they are obviously well fed and to glorify in it (the

Appendix – Other People’s Comments from Various Blogs

statue) was an act of barbarity. Yes, yes, I know that "sophisticated" believers don't take the Eucharist literally. But that's the point - they have to transform its meaning because the plain one is horrifying to (almost) everyone.

Religion is Weird

Source:

http://scienceblogs.com/pharyngula/2009/01/jack_chick_explains_the_cracke.php#comment-1299348

Posted by: Russell | January 6, 2009 11:55 AM

What I find weird is that religious sects can laugh at the oddities in other sects, while taking their own rites so seriously. The protestant believes that God sacrifices himself, in the guise of his son, to himself, to save us from himself. Now *that* makes perfect sense. But to say a bit of that ritual sacrifices is magically enacted in each mass [referring to Catholic's belief in the Eucharist] -- well, that's just weird. Both the Catholic and the protestant laugh at the Mormon's magical underwear. None of them can fathom how the Muslim believes the Quran is the literal word of God, though all believe they have his words in the anonymous writings of the gospels.

Religion is weird. And the weirdest thing about it is that those who believe the weirdest things have utterly no sympathy with those who believe a slightly different set of weird things.

The Value of Life

Source:

http://scienceblogs.com/pharyngula/2008/12/marketing_evolution.php#comment-1245710

Posted by: patrickhenry | December 6, 2008 2:05 PM

I've attempted to explain (without much success) that our existence is more valuable when viewed as the result of evolution than as a miracle. If we can be created merely with a divine thought, then wiped out (as with Noah's Flood), and then whimsically re-created again, where's the value in that? Life is cheap, a throw-away toy.

We're special because we're at the tail end of an enormously long, perhaps improbable, never-to-be-repeated chain of events, and we've got intelligence and free will. We're unique. Even if we're not the only intelligent life in the universe, we're certainly rare. That means we're precious. We're the icing on the cake. We're irreplaceable in the whole cosmos. How could anyone ponder that and even think about futility?

Why the Theory of Evolution Doesn’t Dictate Morality

Source:

http://scienceblogs.com/pharyngula/2009/11/i_get_email_48.php#comment-2086284

Posted by: Sastra | November 18, 2009 7:16 PM

Unfortunately, I mislaid my Atheist Moral Directive and accidentally wound up taking my morals from the Theory of Gravity, instead of the Theory of Evolution. Now I have to keep throwing people out of windows, because things are supposed to fall.

They don't much like it, and it's hard work -- but it's the Law.

Yes, Yes, There *Might* Be a God

http://scienceblogs.com/pharyngula/2009/11/the_deep_rifts_simply_call_us.php#comment-2060775

Posted by: CJO | November 9, 2009 5:23 PM

Most atheists I know are agnostic atheists. That is, they can admit that we don't know everything, and that there is a possibility, however distant, that the universe is, in fact ruled by a trickster deity or by one who for whatever other reason does not make his/her/its existence manifest to human beings. Or, in even weaker terms, has not made his/her/its existence manifest to *me*.

You can't really oppose the terms without making a category error. Agnosticism is an epistemological [sic] position; it's about what we can and can't know. Atheism is an ontological position; it's about what does and does not exist.

Atheism in the face of inevitable epistemological uncertainty says, in effect: yes, yes, there *might* be a god, but why isolate that 'maybe' out of all the other unprovable absurdities that the human imagination has invented throughout history? It *might* be turtles all the way down, too. And at that point, it's more about other peoples' beliefs than one's own. Because theists must face epistemological uncertainty as well. That much is universal.

Everything from Nothing?

http://scienceblogs.com/pharyngula/2009/10/donohue_rants_some_more.php#comment-2010152

Posted by: SEF Author Profile Page | October 20, 2009 12:55 PM

@ Sandra Kay #78:

I think it could be the argument that everything couldn't come from nothing! What is a good comeback for that?

Point out that by making up a god (or adopting a god someone else made up) they are still requiring everything to come from nothing - because in their story the god(s) had to come from nothing in order to then make the rest of the stuff.

They haven't made the problem go away at all. They're just shoving in an extra stage - and not even a particularly sensible one. They've made matters worse because they want their ex nihilo god to be an intelligent intentional being (typically with a bunch of other complications such as omniscience etc).

How much easier it is for a universe to simply be a messy accidental splurge which then takes humungous amounts [of] time to self-organise, quite naturally and unintentionally. They're the ones postulating a 747 god somehow self-assembling from nothing before even getting on and creating the junkyard.

Appendix – Ein Sophistry's Genetic Evidence of Evolution

This really is one of the best blog comments I've ever read, and also one of the best brief explanations of why evolution is just so likely. It includes just the right amount of actual, hard data, as opposed to relying on just concepts. I've written in other places that evolution doesn't necessarily conflict with Christianity, but it was one of my first seeds of doubt concerning my religion, and it is certainly part of a cultural conflict in this country right now, so I feel this is still a good addition to this collection.

Ein Sophistry's Genetic Evidence of Evolution

source:

http://scienceblogs.com/pharyngula/2006/11/handing_out_a_little_rope.php#c273929

Posted by: Ein Sophistry | November 27, 2006 12:47 AM

While the problems of presuppositionalism have been well explicated here, I'm willing to throw Mr. Lewis [referring to Daniel J. Lewis, not the author of this booklet] a bone out of curiosity as to how the Bible can be made to account for the molecular evidence which seems to point - exclusively - to common descent.

I must say at the outset that I do not know your level of fluency with biological terminology, so I apologize for any redundancy in explanation. It's not my intention to talk down to you; It's just that these are, I think, extremely important points, and I want them to be fully comprehended.

Humans and chimpanzees share around 98% of their DNA. Now, it may be (and has been) argued that common genes reflect merely common function, common features designed (intelligently) for common environments. The first and easiest point to make against this claim is simply that common function needn't at all require common materials. A bird's wing and a butterfly's wing arise during development from different tissue and have different genetic underpinnings, but both enable the organism to stay aloft and get around adequately. Biologists make a distinction between homology and analogy, where the former refers to structures that arise from common embryonic tissue and the latter to structures that serve a common function. The posited argument from common function can only explain structures which are both homologous and analogous; it cannot account for non-homologous analogs like the aforementioned wings or non-analogous homologs (structures which develop from the same tissue but serve different functions) such as bird wings and our arms or the fins of a fish. Further, it is difficult for this explanation to make sense of the fact that chimpanzees have more DNA in common with us than with gorillas, though

Appendix – Ein Sophistry's Genetic Evidence of Evolution

gorillas share the chimpanzees' forested environment while we are generally savannah creatures. The doctrine of common function would seem to predict that cetaceans (dolphins, porpoises, whales) would have more genetic material in common with, say, sharks than with the ruminants from which they are thought by biologists to be descended. While I don't know if any representative genomes from these three types of organisms have been fully sequenced yet, I can't imagine that many people would place any money on the shark.

But there is a much more powerful counterargument to the doctrine of common function. It concerns what's come to be called "junk DNA." The vast majority of our genome is in fact never read, never translated into proteins. It serves no function, at least none specified by a nucleotide sequence. There would be no reason, then, to expect commonalities in nucleotide sequence between the junk DNA of apes and that of humans. Troublingly, such commonalities do in fact exist and I will explain a few of those so far discovered.

There are two types of junk sequences I want to talk about here: retrogenes and pseudogenes. Retrogenes are sequences from retroviruses which have been inserted into the host's genome. As you may recall, viruses cannot reproduce on their own; they must use the host's replication machinery. When a virus inserts itself into a coding region of DNA, the host cell begins to manufacture copies of the virus, which will eventually burst through the cell and go on to infect its neighbors in similar fashion. Another, less destructive, way for a virus to get copied, though, is to insert its genome into a non-coding region of the host's DNA. It becomes effectively a part of the host's genome and is copied along with it prior to each cellular division. Now, for this virus to be passed on to the next generation, it must infect the gametes (sex cells), or the embryological precursors thereof. There are at present seven known retrogenes shared by humans and chimpanzees (For detailed treatments of some of these see: Bonner et al. 1982; Svensson et al. 1995; and Sverdlov 2000). Further, these retrogenes are present in the same locations in chimpanzee and human genomes. Common descent can easily make sense of these commonalities, but what of the alternatives? It is enough of a stretch to say that, absent common descent, a single virus infected the germ line of these two species in the same genomic locations out of the billions of possible locations, but to argue that this happened independently at least seven times strains credulity to a point far beyond what any rational being should allow.

Pseudogenes are formerly functional genes that have been disabled by random mutation. One such pseudogene shared by all primates is known as $\psi\eta$ -globin, which used to play a role in hemoglobin function. This pseudogene is found in the same chromosomal locations across primate species. Further, the mutations which disabled this gene are the same and are found at the same places within it (Goodman, et al. 1989). Another pseudogene, common to humans and chimpanzees, coded for a steroid called 21-hydroxylase. Humans and chimps

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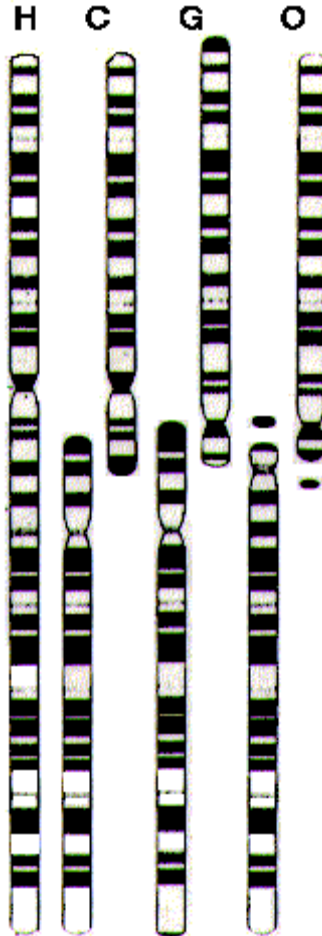
actually have both a functional and a nonfunctional copy of this gene (the likely result of a type of mutation called gene duplication). The nonfunctional copies of both humans and chimps are missing identical sets of eight base pairs (Kawaguchi et al. 1992). If these species did not inherit these pseudogenes from a common ancestor, they would have had to independently acquire the same mutations in the reproductive cells (because, again, the mutations would have had to be passed on) at precisely the same locations on precisely the same genes--a vanishingly small probability. Still another example, shared by humans and the great apes, codes for the enzyme L-gulano-gamma-lactone oxidase, which allows its bearer to synthesize vitamin C. The disabling mutation in this gene is why we (and the great apes) must get vitamin C from our diets. Here again, in each species, the gene exhibits the same errors in the same locations. The only other mammal in which this gene is known to be broken is the guinea pig--and, as expected, the mutation is different and is in another location, for guinea pigs are not recent concestors.

These are but a few examples. Most mammals are highly olfactory creatures, hence adaptations like a long snout and a wet nose. Primate evolution has exhibited a marked decrease in reliance on the sense of smell, as exhibited by the gradual reduction in snout length and the loss of the wet nose (still retained in lemurs, the most primitive living primates). Humans have nearly 100 different olfactory genes, yet around 70 of them are inactivated pseudogenes (Rouquier, et al 2000). Why would we have all these useless genes devoted to olfaction if we were built from scratch and not descended from ancestors for whom olfaction was much more important?

Now, as I've said, humans and chimps have vastly similar genomes. One conspicuous difference, though, is in the number of chromosomes present. Our haploid chromosome number is 23, while that of chimpanzees and the other great apes is 24. How do we explain this? Chromosomes are not uniform in structure, and when stained with certain dyes will exhibit distinctive banding patterns which may be used to gauge similarities or detect abnormalities. The following picture compares the banding patterns of human chromosome 2 (chromosomes are numbered according to their size, 1 being the largest) and two chromosomes (called 2p and 2q) each from chimpanzees, gorillas, and orangutans:

http://www.gate.net/~rwms/hum_ape_chrom_2.gif

[The original blog comment only included a link to the picture. The picture is included here as a reference for the reader.]



You can see that there are many similarities, most notably between the patterns of the human and chimp chromosomes. This led researchers to hypothesize that earlier versions of the two chromosomes possessed by the apes shown above had fused to create our chromosome 2 in one of our ape-like ancestors (Yunis, et al 1980; Yunis & Prakash, 1982). Is there any evidence for this?

There is, but it will require a little more background explanation. When the enzymes responsible for the replication of DNA get to the end of a strand,

Appendix – Ein Sophistry's Genetic Evidence of Evolution

there's nothing for them to hold on to, and so they fall off without being able to replicate the last few nucleotides. Because this would quickly degrade the genome (and the organism harboring it), chromosomes have long, non-coding strings on their ends called telomeres, which serve to prolong the destruction of the coding genetic material (what manifests to us as the process of aging)¹²⁴. Our telomeres consist of a specific six-base pair section repeated over and over: thymine-adenine, thymine-adenine, adenine-thymine, guanine-cytosine, guanine-cytosine, and guanine-cytosine. Interestingly, we find these telomeric regions in the middle of our chromosome 2, right at the expected point of fusion. Further, the bases and the sequence even reverse in the middle of this region (remember that the two DNA strands are anti-parallel), indicating the presence of both a trailing and a leading telomere (as from two different chromosomes) (Ijdo, et al. 1991).

There is more. There is a region of the chromosome called a centromere, which is crucial to proper cell division. These are the slightly constricted regions in the chromosomes shown in the above image. Our chromosome 2 contains remnants of a second centromere corresponding to the centromere seen on the lower chimpanzee chromosome (Avarello, et al. 1992).

Each of these lines of evidence is individually quite powerful. Take them all together, though--along with the morphological, geographical, and fossil evidence--and the force of the argument becomes tremendous. Common descent is the only thing that can satisfactorily account for the discussed similarities.

Avarello, R., A. Pedicini, et al. (1992). "Evidence for an ancestral alphoid domain on the long arm of human chromosome 2." *Hum Genet* 89(2): 247-9.

Bonner, T. I., C. O'Connell, et al. (1982). "Cloned endogenous retroviral sequences from human DNA." *PNAS* 79: 4709.

Goodman, M., B. F. Koop, et al. (1989). "Molecular phylogeny of the family of apes and humans." *Genome* 31 (316-335).

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¹²⁴ There is an enzyme, telomerase, that will rebuild telomeres so that they don't get too short, but in humans and most other animals, telomerase only functions in stem cells, sperm cells, and egg cells. Most cells don't rebuild the telomeres, so there's a limit to how many times the cells can duplicate. But the important aspect for this discussion is that telomeres do exist at the ends of chromosomes as a kind of buffer for DNA duplication, and human chromosome 2 shows evidence of telomeres in the middle of the chromosome, indicating a fusion of two ancestral chromosomes.

Appendix – Ein Sophistry's Genetic Evidence of Evolution

Kawaguchi, H., C. O'hUigin, et al. (1992). "Evolutionary origin of mutations in the primate cytochrome P450c21 gene." *American Journal of Human Genetics* 50: 766-780.

Rouquier, S., A. Blancher, et al. (2000). "The olfactory receptor gene repertoire in primates and mouse: Evidence for reduction of the functional fraction in primates." *PNAS* 97: 2870-2874.

Svensson, A. C., N. Setterblad, et al. (1995). "Primate DRB genes from the DR3 and DR8 haplotypes contain ERV9 LTR elements at identical positions." *Immunogenetics* 41: 74.

Sverdlov, E. D. (2000). "Retroviruses and primate evolution." *BioEssays* 22: 161-171.

Yunis, J. J., J. R. Sawyer, K. Dunham. (1980). "The striking resemblance of high-resolution g-banded chromosomes of man and chimpanzee." *Science* 208(6): 1145-1148.

Yunis, J. J., O. Prakash. (1982). "The origin of man: a chromosomal pictorial legacy." *Science* 215(19): 1525-1530.

Appendix – Various Quotes on Free Thinking, Religion, and Science

The trouble with the world is that the stupid are cocksure and the intelligent are full of doubt.

- *Bertrand Russell*

Many people would sooner die than think; in fact, they do so.

- *Bertrand Russell*

I am free because I know that I alone am morally responsible for everything I do.

- *Robert A. Heinlein*

The only problem with being the unfashionable atheist is that if we are right we never get the chance so say 'told you so'!

- *Anonymous*

For me it is far better to grasp the universe as it really is than to persist in delusion, however satisfying and reassuring.

- *Carl Sagan*

If God made us in His image we have certainly returned the compliment.

- *Voltaire*

Faith is believing what you know ain't so.

- *Mark Twain*

I contend we are both atheists, I just believe in one fewer god than you do. When you understand why you dismiss all the other possible gods, you will understand why I dismiss yours.

- *Stephen F. Roberts*

The fact that a believer is happier than a sceptic is no more to the point than the fact that a drunken man is happier than a sober one. The happiness of credulity is a cheap and dangerous quality.

- *George Bernard Shaw*

Reality is that which, when you stop believing in it, does not go away.

- *Philip K. Dick*

The cure for a fallacious argument is a better argument, not the suppression of ideas.

- *Carl Sagan*

Appendix – Various Quotes on Free Thinking, Religion, and Science

Be thankful that you have a life, and forsake your vain and presumptuous desire for a second one.

- *Richard Dawkins*

I distrust those people who know so well what God wants them to do because I notice it always coincides with their own desires.

- *Susan B. Anthony*

It ain't the parts of the Bible that I can't understand that bother me, it is the parts that I do understand.

- *Mark Twain*

I do not fear death, in view of the fact that I had been dead for billions and billions of years before I was born, and had not suffered the slightest inconvenience from it.

- *Anonymous (though often credited apocryphally to Mark Twain)*

I'm not afraid of death. It's the stake one puts up in order to play the game of life.

- *Jean Giraudoux*

Pray: To ask that the laws of the universe be annulled in behalf of a single petitioner confessedly unworthy.

- *Ambrose Bierce*

You can know the name of a bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird... So let's look at the bird and see what it's doing — that's what counts. I learned very early the difference between knowing the name of something and knowing something.

- *Richard Feynman*

The worthwhile problems are the ones you can really solve or help solve, the ones you can really contribute something to. ... No problem is too small or too trivial if we can really do something about it.

- *Richard Feynman*

To those who do not know mathematics it is difficult to get across a real feeling as to the beauty, the deepest beauty, of nature ... If you want to learn about nature, to appreciate nature, it is necessary to understand the language that she speaks in.

- *Richard Feynman*

Appendix – Various Quotes on Free Thinking, Religion, and Science

It doesn't seem to me that this fantastically marvelous universe, this tremendous range of time and space and different kinds of animals, and all the different planets, and all these atoms with all their motions, and so on, all this complicated thing can merely be a stage so that God can watch human beings struggle for good and evil — which is the view that religion has. The stage is too big for the drama.

- *Richard Feynman*

Our imagination is stretched to the utmost, not, as in fiction, to imagine things which are not really there, but just to comprehend those things which are there.

- *Richard Feynman*

For a successful technology, reality must take precedence over public relations, for nature cannot be fooled.

- *Richard Feynman*

God was invented to explain mystery. God is always invented to explain those things that you do not understand. Now, when you finally discover how something works, you get some laws which you're taking away from God; you don't need him anymore. But you need him for the other mysteries. So therefore you leave him to create the universe because we haven't figured that out yet; you need him for understanding those things which you don't believe the laws will explain, such as consciousness, or why you only live to a certain length of time — life and death — stuff like that. God is always associated with those things that you do not understand. Therefore I don't think that the laws can be considered to be like God because they have been figured out.

- *Richard Feynman*

Poets say science takes away from the beauty of the stars — mere globs of gas atoms. Nothing is "mere". I too can see the stars on a desert night, and feel them. But do I see less or more? The vastness of the heavens stretches my imagination — stuck on this carousel my little eye can catch one-million-year-old light. A vast pattern — of which I am a part... What is the pattern or the meaning or the why? It does not do harm to the mystery to know a little more about it. For far more marvelous is the truth than any artists of the past imagined it. Why do the poets of the present not speak of it? What men are poets who can speak of Jupiter if he were a man, but if he is an immense spinning sphere of methane and ammonia must be silent?

- *Richard Feynman*

...the "paradox" is only a conflict between reality and your feeling of what reality "ought to be."

- *Richard Feynman*

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I have a friend who's an artist, and he sometimes takes a view which I don't agree with. He'll hold up a flower and say, "Look how beautiful it is," and I'll agree. But then he'll say, "I, as an artist, can see how beautiful a flower is. But you, as a scientist, take it all apart and it becomes dull." I think he's kind of nutty. [...] There are all kinds of interesting questions that come from a knowledge of science, which only adds to the excitement and mystery and awe of a flower. It only adds. I don't understand how it subtracts.

- Richard Feynman

Have no respect whatsoever for authority; forget who said it and instead look what he starts with, where he ends up, and ask yourself, "Is it reasonable?"

- Richard Feynman

We are at the very beginning of time for the human race. It is not unreasonable that we grapple with problems. But there are tens of thousands of years in the future. Our responsibility is to do what we can, learn what we can, improve the solutions, and pass them on.

- Richard Feynman

The fact that you are not sure means that it is possible that there is another way someday.

- Richard Feynman

I can live with doubt, and uncertainty, and not knowing. I think it's much more interesting to live not knowing than to have answers which might be wrong. I have approximate answers, and possible beliefs, and different degrees of certainty about different things, but I'm not absolutely sure of anything, and in many things I don't know anything about, such as whether it means anything to ask why we're here, and what the question might mean. I might think about a little, but if I can't figure it out, then I go to something else. But I don't have to know an answer. I don't feel frightened by not knowing things, by being lost in a mysterious universe without having any purpose, which is the way it really is, as far as I can tell, possibly. It doesn't frighten me.

- Richard Feynman

Science is a way of trying not to fool yourself. The first principle is that you must not fool yourself, and you are the easiest person to fool.

- Richard Feynman

Science is what we have learned about how not to fool ourselves about the way the world is.

- Richard Feynman

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Science alone of all the subjects contains within itself the lesson of the danger of belief in the infallibility of the greatest teachers in the preceding generation ... Learn from science that you must doubt the experts. As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts.

- *Richard Feynman*

We absolutely must leave room for doubt or there is no progress and no learning. There is no learning without having to pose a question. And a question requires doubt. People search for certainty. But there is no certainty. People are terrified—how can you live and not know? It is not odd at all. You only think you know, as a matter of fact. And most of your actions are based on incomplete knowledge and you really don't know what it is all about, or what the purpose of the world is, or know a great deal of other things. It is possible to live and not know.

- *Richard Feynman*

Physics is like sex. Sure, it may give some practical results, but that's not why we do it.

- *Richard Feynman*

Religion is a culture of faith; science is a culture of doubt.

- *Richard Feynman*

You know, the most amazing thing happened to me tonight. I was coming here, on the way to the lecture, and I came in through the parking lot. And you won't believe what happened. I saw a car with the license plate ARW 357. Can you imagine? Of all the millions of license plates in the state, what was the chance that I would see that particular one tonight? Amazing!

- *Richard Feynman*

The fact that we live at the bottom of a deep gravity well, on the surface of a gas covered planet going around a nuclear fireball 90 million miles away and think this to be normal is obviously some indication of how skewed our perspective tends to be.

- *Douglas Adams*

A learning experience is one of those things that say, "You know that thing you just did? Don't do that.

- *Douglas Adams*

We don't have to save the world. The world is big enough to look after itself. What we have to be concerned about is whether or not the world we live in will be capable of sustaining us in it.

- *Douglas Adams*

Appendix – Various Quotes on Free Thinking, Religion, and Science

Yes, it was an act of God. But which God?

- *Douglas Adams*

The great thing about being the only species that makes a distinction between right and wrong is that we can make up the rules for ourselves as we go along.

- *Douglas Adams*

Human beings, who are almost unique in having the ability to learn from the experience of others, are also remarkable for their apparent disinclination to do so.

- *Douglas Adams*

The system of life on this planet is so astoundingly complex that it was a long time before man even realized that it was a system at all and that it wasn't something that was just there.

- *Douglas Adams*

All opinions are not equal. Some are a very great deal more robust, sophisticated and well supported in logic and argument than others.

- *Douglas Adams*

I'd take the awe of understanding over the awe of ignorance any day.

- *Douglas Adams*

Isn't it enough to see that a garden is beautiful without having to believe that there are fairies at the bottom of it too?

- *Douglas Adams*

He hoped and prayed that there wasn't an afterlife. Then he realized there was a contradiction involved here and merely hoped that there wasn't an afterlife.

- *Douglas Adams*

What to do if you find yourself stuck with no hope of rescue: Consider yourself lucky that life has been good to you so far. Alternatively, if life hasn't been good to you so far, which given your present circumstances seems more likely, consider yourself lucky that it won't be troubling you much longer.

- *Douglas Adams*

I may not have gone where I intended to go, but I think I have ended up where I needed to be.

- *Douglas Adams*

Appendix – Various Quotes on Free Thinking, Religion, and Science

It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth with Reproduction; Inheritance which is almost implied by reproduction; Variability from the indirect and direct action of the conditions of life and from use and disuse: a Ratio of Increase so high as to lead to a Struggle for Life, and as a consequence to Natural Selection, entailing Divergence of Character and the Extinction of less-improved forms. Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.

- *Charles Darwin*

The world is a thing of utter inordinate complexity and richness and strangeness that is absolutely awesome. I mean the idea that such complexity can arise not only out of such simplicity, but probably absolutely out of nothing, is the most fabulous extraordinary idea. And once you get some kind of inkling of how that might have happened, it's just wonderful. And . . . the opportunity to spend 70 or 80 years of your life in such a universe is time well spent as far as I am concerned.

- *Douglas Adams*

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A Note from the Author

I grew up in a religious house. We went to church every Sunday; my mother was director of the CCD program; my brothers and I were even altar boys. This wasn't all just ceremony. I sincerely believed in God and Jesus, and thought I could feel His presence when I prayed.

But as I got older, I began to question my religious beliefs, and eventually realized that I'd been mistaken. There was no moment of epiphany. The gradual realization came after several years of research and intense self-reflection. During the course of that transformation and afterwards, I wrote several essays documenting the thought process that I went through in abandoning Christianity, as well as some of my current positions as a nonbeliever. This book is a collection of some of those essays.

I realize there are already essays and even entire books on this subject by philosophers and famous scientists who are much more well-known than me, but I figure it doesn't hurt to add one more voice. Perhaps it will strike a chord with some readers, and help them to see things differently. Even for those not questioning their faith, I would hope these essays show the thought that goes into abandoning one's religion, and allows them to at least respect and tolerate, if not agree with, atheists.