

Ii – Indoctrination in Ignorance

Dear: I wouldn't be surprised [by which I mean that my estimate for the associated probability is greater than about 0.3 (☺)] if a certain inquisitive grandchild [who once asked her grandfather: "Grampa, how come you don't believe in God?"], after conscientiously slugging through all the concepts and symbolism of probability theory that were given in the previous chapter, now asked:

"Well, then, Grampa, what do you think is the probability that God exists?"

Sheesh! Will the questions never end? Maybe the best response was from one of the "fathers" of probability theory, Laplace (who was also an astronomer), who said to Napoleon (when he complained that Laplace didn't include the idea of God in his book on astronomy): "Sire, I have no need for that hypothesis."

But apparently many people do "have... need for that hypothesis", so let me try to respond to your imagined question about what I "think" is a reasonable estimate for the probability that God exists. To do that, I'll start by estimating some related probabilities – such as the probability that my thinking, itself, exists, and the probability that I exist. If the propositions "I think" and "I exist" seem to have quiet high probability of being reliable, then I'll address the question of what I (!) think (!) is a consistent estimate for the probability of God's existence.

First, though, let me remind you of my estimate of the chance that I ever came into existence.¹ As you might recall, in Chapter G (dealing with "the game of life") I tried to estimate the chance (my luck!) that I was ever born. I estimated (extremely crudely!) that the probability that I would be born, given that the universe existed {which in the notation of the previous chapter would be $p[(Me)|Universe]$, where, recall, the symbol "|" is to be read "given"} is somewhere around 1 chance in 10^{60} . I then "threw in the wild guess" that the probability that the universe would be here (resulting from, e.g., a symmetry-breaking fluctuation in a total void, which in turn led to the

¹ Dear: Please notice that, as I'll return to later in this chapter, the probability that I would ever come into existence is different from the probability that I do exist.

Big Bang) would be around 10^{-40} . And I admit that I chose that value mostly just to keep the numbers “neat”, since it yields

$$p(\text{Me}) = p[(\text{Me})|\text{Universe}] \cdot p(\text{Universe}) = 10^{-60} \cdot 10^{-40} = 10^{-100}.$$

That is, according to that (extremely crude!) estimate (or “guesstimate”), there’s only about 1 chance in 10^{100} (known as “a google”) that I would have come into existence!²

Such a result (even if it’s off by a huge amount) suggests that caution is needed when interpreting probabilities: there’s only one chance in 10^{100} (or so) that I’d come into existence; yet, I claim that I did! To examine that idea in a different way, consider again Bayes’ method. Written in terms of the “a priori” and “a posterior” probabilities in Bayes’ theorem, let $p[(\text{Me})|E]$ be the probability that I’m here (Me!) based on the evidence, E, and let $p_o(\text{Me})$ be my first estimate (given above) that I’m here [that is, I’ll take $p_o(\text{Me}) = 10^{-100}$ to be the *a priori* probability that I’m here]. Then Bayes’ theorem becomes

$$p[(\text{Me})|E] = p[E|(\text{Me})] \cdot p_o(\text{Me}) / p(E) = p[E|(\text{Me})] \cdot 10^{-100} / p(E).$$

Consequently, if this formula is to yield a $p[(\text{Me})|E]$ of near unity (and it better, because I claim that I’m here!), then the ratio $\{p[E|(\text{Me})] / p(E)\}$ better be huge, namely, very close to being 10^{100} !

Well, fortunately it seems to be so. In particular, if I assume that the only two possibilities are that I’m here (Me) or that I’m not ($\neg\text{Me}$), then

$$p(E) = p[E|(\text{Me})] \cdot p_o(\text{Me}) + p[E|(\neg\text{Me})] \cdot p_o(\neg\text{Me}),$$

² I trust you realize, Dear, that this estimate for the probability that I would come into existence could be off by a huge amount. For example, although I guessed that the probability that the universe would come into existence was 1 in 10^{40} (just to keep the numbers “neat”), yet subsequently [in an article in the 11 February 2005 issue of *Science* (vol. 307, pp. 884 – 890) dealing with “Inflationary Cosmology” by Alan H. Guth and David I Kaiser], I found the suggestion (from string theory) that the number of “vacuum-like states” (each of which could potentially become a “universe” – though not necessarily with the same number of dimensions, or with similar “fundamental constants”, or as “stable” as ours) is “something like” 10^{500} ! Thus, if that’s anywhere near a realistic number of how many “verses” (multiverses!) that could come into existence and if the probability that any one of such “verse” did attempt to pop into existence is about 1 chance in 10^{440} (which I chose just to make the numbers “neater” and to give some symmetry to the estimate!), then the probability that I would come into existence would be not 10^{-100} but closer to 10^{-500} ! See what I mean by being off by “a huge amount”?! Note, however, that as yet, no experimental tests of predictions from string theory have been reported.

but in the case of not-Me (i.e., $\neg\text{Me}$) {a possibility that I grant is initially highly likely [namely, $p_o(\neg\text{Me}) \cong (1 - 10^{-100})$]}, there would be totally zero evidence that I existed (it's a tautology); therefore, $p(E)$ reduces to $p[E|(\text{Me})] \cdot p_o(\text{Me})$. Consequently, in this case, Bayes' theorem reduces to

$$p[(\text{Me})|E] = p[E|(\text{Me})] \cdot p_o(\text{Me}) / \{p[E|(\text{Me})] \cdot p_o(\text{Me})\} = 1 ,$$

i.e., I get the (stunning!) result that, if there's evidence that I'm here and if the evidence can only be interpreted to mean that I'm here, then just as I thought all along, I'm here!

But that demonstration mostly serves to reveal that Bayes' method isn't very informative when it's used to evaluate probabilities when the odds are either extremely small or extremely large. Instead, more informative is to "look at the limits", separately. So, having already looked at the limiting case of the probability that I would ever be born [leading to the "guesstimate" that $p(\text{Me}) \cong 10^{-100}$], let me see if I can similarly develop a crude estimate of the probability that, in fact, I'm here, i.e., $p(\text{I am})$.

Before doing that, however, I should pause to comment on a major difference between the two probabilities under consideration: one is the probability that I would come into existence, and the other is the probability that I do exist (or that I did come into existence). The difference between these two probabilities is as dramatic as (and is derived from) the difference between the past and the present (or the future).

To distinguish the difference, I probably should change the notation. For example, although it's rather clumsy notation, I'll use for the probability that I would come into existence not $p(\text{Me})$ but

$$p(\text{I would come into existence}) ,$$

and for the probability that I'm here, I'll use not $p(\text{I am})$ but

$$p(\text{I do exist}), \text{ or } p(\text{I came into existence}), \text{ or } p(\text{I did come into existence}) .$$

To appreciate the difference between these two probabilities, consider an analogous case dealing with lightning. Thus, it's one thing to estimate the probability that lightning will strike you in the future (e.g., since about 30

Americans per year of 300 million are killed by lightning, then the probability that you'll be killed this year by lightning is about 30/300 million = 10^{-7}). On the other hand, upon finding someone dead and singed in the middle of a field after a lightning storm, it's then quite a different task to estimate the probability that the person was killed by lightning! Similarly here: although the probability that I would come into existence is incredibly small ($\cong 10^{-100}$), it's quite a different task to estimate the probability that I did come into existence.

Toward the task of estimating the probability that I do exist, you may recall from an earlier chapter (**Ia**, entitled "Ideas about Awareness") that Descartes tackled the similar problem for himself (in a manner similar to Augustine and even Aristotle), concluding: "I think; therefore, I am." But actually, I think his result could be challenged, because his "proof" that his thinking exists seems weak. He argued (similar to Augustine) that some giant trickster in the sky could be tricking him into thinking that he (Descartes) exists, but even so (says Descartes), the trickster would need to admit that Descartes was thinking. But I would challenge Descartes that he didn't give the giant trickster enough credit: such a trickster could also be tricking Descartes into thinking that he's thinking. For all Descartes would know, people may merely be machines through which some giant programmer in the sky "plays out" his own thoughts, watching what happens when billions of his programmed machines interact!

And from reading contorted, gobbledygook arguments such as the one in the previous paragraph, I conclude (as I mentioned before) that ontology (the theory of existence) is a waste of time and mental energy. Better, by far, is to treat "existence" phenomenologically. That is, as far as I'm concerned, such concepts as "I think" and "I exist" should be treated as hypotheses, to be accepted (or rejected!) depending on experimental tests of their predictions. And whereas I've been thinking and also thinking that I exist for essentially every second of the past 65 years or so (i.e., about 65 years x 365 days/yr x 18 hours/day x 3600 seconds/hour $\cong 10^9$ seconds) and never for even one of these billion-or-so seconds have I found that associated predictions are invalid (i.e., never once have I stopped and said something similar to "Hmmm, I wonder if what's wrong here is my hypothesis that I and my thoughts exist"), I therefore conclude that the probability that the hypotheses (that my thinking and I exist) are wrong is less than 1 chance in a billion.

In fact, I think (☺) it's easy to push those probabilities down by another factor of a billion or so. Thus, I'd argue that for the past billion-or-so years, precursors to me (from amoebae to monkeys) have been scurrying around apparently with the firm conviction that they exist and that they "think" (e.g., that they want to survive). Stated differently, the core of this DNA that I still host has been living (existing and in its own way "thinking") for not just 65 years but for closer to 10^9 years. So, if I use 10^9 years rather than the 65 years that I used in the above, then the probability that the hypotheses (that my thinking and I exist) are wrong becomes closer to 1 chance in 10^{16} .

Furthermore, whereas never once have I found any need to question my additional hypothesis that other people are "independent agents" (I can't even get my German shepherd to always do what I want!), and whereas there are many billion of these "independent agents" (better known as people) who all seem to be convinced that they and their thoughts exist, it then seems permissible to multiply my assessment of the probability that my hypothesis that I think and exist is wrong (viz., 10^{-16}) by a factor of 10^9 or so (reflecting the number of people who think!), i.e., I'm fairly confident that the odds of my being wrong about my existing and thinking is less than about 10^{-25} . And I could probably push that probability even lower – but that'll do for now.

So now, starting from my guesstimates for the probability that I would come into existence (i.e., 10^{-100}) and yet the likelihood that I do exist and can think (i.e., validated to within about 1 part in 10^{25} or so), let me now address your assumed question about the probability that God exists. For this case, Dear, please consider what the theists (i.e., "the god believers") are assuming, namely, one of the following two options.

In one option, theists assume that God has always existed, and when he got bored (or whatever) he snapped his fingers (or whatever) to bring our universe into existence. In his book *Cosmos*, the astrophysicist Carl Sagan quickly squelched this option with his comment:

In many cultures it is customary to answer that God created the universe out of nothing. But this is mere temporizing. If we wish courageously to pursue the question, we must, of course ask next where God comes from? And if we decide this to be unanswerable, why not save a step and conclude that the universe has always existed?

The second option (taken by theists who realize that the idea that God has always existed is a superfluous claim) is to assume that God came into existence *ex nihilo*, which is Latin for “out of nothing”. That is, skipping the useless option that God always existed (an option that’s easily shaved using Ockham’s razor), the second option is that total nothingness popped into existence not something “so simple” as our universe, and not something “rather more complicated” such as the first people, but some omniscient, omnipotent, omni-whatever God. They don’t want much for nothing – or I should say “out of nothing”!

Now, therefore, to respond to your assumed question about the probability for the existence of God, I’ll follow the same two-step process that I used when examining my own existence. Thus, the first step will be to estimate NOT the probability that the universe popped into existence out of nothingness [perhaps by some symmetry-breaking fluctuation in a total void (resulting in the Big Bang), whose likelihood I’ve guessed (in the calculation of the probability that I came into existence) to be less than one part in 10^{40}], but instead, to estimate the probability that the total void popped into existence a “full-fledged god”! Then, the second step will be to examine any evidence for the existence of such a god (in a manner similar to the way I examined evidence that seemed to support the hypothesis that I exist).

The first step is the tough one! How can one estimate the probability that God popped into existence *ex nihilo*?! Well, I admit that, really, I don’t know – but anyway, to try to help you, I’ll stumble ahead. I’ll start with the “guesstimate” of 10^{-40} for the probability that “total nothingness” could lead to the Big Bang (and then this universe as it is). As I reminded you in an earlier paragraph, to arrive at that guesstimate I started with the estimate that the probability that I would come into existence was about 10^{-60} , given the existence of the universe. Next, and admittedly just to make the numbers look a little neater, I assumed that the probability that the universe could come into existence (out of “total nothingness”) was 10^{-40} – which then led to the “nice neat answer” for the probability that I would come into existence to be 10^{-100} , i.e., one chance in a google.

Now, to create me, Nature worked at it for about 10 billion years – although not that she didn’t diddle around with a few other odds and ends, such as making galaxies, stars, trees, and so on. So the question posed is: what’s the probability that, if Nature (or “total nothingness” or whatever) gave her

full attention to the task, she could immediately pop out a god (who then went on to create our universe)?

Well, in response I'd say that, if the probability that Nature could create me in 10^{10} years was only 1 chance in $10^{40} \cdot 10^{60} = 10^{100}$, and if (as a rough guesstimate) God is 10^{100} times more advanced than I am (e.g., it takes me more than 6 years to write just a book, whereas God reportedly made the entire universe in 6 days!), then if Nature put her full effort into the task (rather than diddle around for 10^{10} years), perhaps the probability that Nature could pop a full-fledged God into existence out of total nothingness is about 1 chance in 10^{200} – or close enough for government work!

And immediately let me add, Dear, that if you disagree with the above estimate for the probability of God's popping into existence [viz., $p(\text{God would come into existence}) \approx 10^{-200}$], then let me acknowledge that I'm quite willing (even eager!) to entertain suggested improvements to the estimate. Thus, if you think I've overestimated the probability that the universe, itself, could pop into existence, that it should be closer than 10^{-20} rather than 10^{-40} , and if you're kind enough to suggest that God isn't really that more advanced than I am [perhaps suggesting that in a few more thousand years we humans may be able to make universes, e.g., by promoting fluctuations in the glimpses of "total nothingness" that maybe we see through the "holes in the vacuum" that we call antiparticles], thereby suggesting that $p(\text{God would come into existence}) \approx 10^{-100}$, say, then I'd say "fine". Alternatively, if you suggest that the probability that the universe could pop into existence is "way overestimated", that it should be closer to 10^{-500} , and if you further argue that God is far more advanced than what I've given him credit for, thereby suggesting that $p(\text{God would come into existence}) \approx 10^{-1,000}$, then again I'd say "fine". That is, it won't make any difference to the argument that follows if you want to use for the probability that the universe popped out God, any value as (ridiculously) large as 10^{-100} or as (ridiculously) small as $10^{-1,000}$ – or $10^{-10,000}$ – or whatever!

Yet, no matter the value you want to use for the probability of God being created *ex nihilo* (and in what follows, I'll use 10^{-200} , if nothing else than as a number for reference), that of course says nothing about the probability of God's existence. After all, even if the probability that I would come into existence is somewhere around 10^{-100} , yet I'm fairly confident (to within about 1 part in 10^{25}) that I did! So the next question – a separate question –

is: What's the probability that God's here, i.e., that he exists, i.e., what's the value for $p(\text{God did come into existence})$?

To answer that question, just as I tried to assess the hypothesis that I exist, the task is to test the reliability of predictions derived from the hypothesis that God exists – and then some. And I add “and then some”, because surely everyone agrees with the general idea expressed by Carl Sagan:

Extraordinary claims require extraordinary evidence.

In particular, whereas I expect that essentially everyone would like to see evidence that's, say, 10 times more compelling to support a claim that's 10 times less likely, whereas I've suggested the “guesstimate” that the probability that God would come into existence (viz., 10^{-200}) is somewhere around 10^{100} times less likely than the probability that I would come into existence, and finally, whereas my own existence is confirmed (I claim) to within about 1 part in 10^{25} , then as a rough estimate that seems to preserve some desired symmetry (at least in my view!), it would seem “fair” that predictions based on the hypothesis God exists should be confirmed with doubt no greater than 1 part in 10^{125} – although, if you want to quibble, I'll settle for confirmation within a 1 part in 10^{100} , or even 1 part in 10^{50} , or for cryin' out loud, at least a measly 1 part in 10^{25} ! So then, once again, what predictions follow from the hypothesis that God exists (or that God did come into existence), and then, what's the reliability of those predictions?

One claim is that God created the universe, and since it's here, then obviously so is God. But surely anyone jests if that's to be used as a prediction: if nothingness can pop God into existence, then its popping out a universe would be “small potatoes”! Theists will need to come up with a better prediction than that sort of silliness!

Well, of course there's the prediction (made by many different groups of clerics) that if you don't believe that God made the universe, then you're headed for eternal damnation. That seems to be a fairly precise prediction, but as I've already noted (many times!), it can only be tested by dead people. Consequently, I trust that the clerics of the world won't be too upset if this prediction is rejected as “more silliness” – although, of course I'd invite any and all clerics to go ahead and test their prediction for themselves.

Anything else? And, for a change, something serious?! Don't forget, what's desired is a prediction that's indisputable to within a factor better than 1 part in 10^{125} (or even 1 part in 10^{25} !), not some measly "Well, chances are..." For example, how about a good-old-fashioned miracle? Not your run-of-the-mill type of miracle (such as Jesus walking on water or Muhammad or Joseph Smith conversing with angels, which were claimed to be confirmed by a few of their followers), because as David Hume argued, what's needed is confirmation for which the probability of its validity vastly outweighs the probability that the reporters are lying, hallucinating, or similar.

Instead, what's wanted is a miracle that would really catch people's attention – and not just a few people, but a lot of people! For example, let me again suggest to God (should he exist) that he missed a great opportunity by not undoing the terrorists' destruction of the World Trade Center. But actually, such a miracle probably wouldn't have been sufficient to satisfy the criteria of "beyond a reasonable doubt", i.e., to within 1 part in 10^{125} (or even 1 part in 10^{25}).

What I'm thinking is that, while I had the TV on, watching the second aircraft crash into the World Trade Center, if I had seen a giant hand reach down from the sky and catch that second aircraft before it crashed into the Towers, then the crashed building re-assembled and the first aircraft held in mid-air by another hand, and if I then heard a resonating voice say "Thou shall not kill!" (I don't know why the voice should resonate, but it would have added to the drama), then I'm sorry, but I'd conclude that it was just some "special effects" created by adding some graphics to a re-run video.

And let me add that even if 10 million (10^7) New Yorkers swore "up and down" that it "really happened", I'd point out not only that New Yorkers are fairly well known for their swearing but also, so what? That would be confirmation of a miracle only to within 1 part (me being the "doubting Thomas") in about 10^7 (New Yorkers) – which is still along way from the desired 1 part in 10^{125} (or even 1 part in 10^{25}). Yet let me immediately add (in case God's paying attention) that I don't want to discourage him: undoing the destruction of the World Trade Center would have been a good start. It's just that I'd advise him not to give up on his first try.

Meanwhile, though, in the absence of giant hands catching aircraft in mid-air, what's the evidence offered for any miracle? It's reported (by whatever group of authors wrote the Old Testament) that Moses raised his staff and

parted the Red Sea (actually, “Reed” Sea), it’s reported (by whatever group of authors who wrote the New Testament) that some followers of Jesus saw him walk on water (and sundry other “miracles”), it’s reported (by whatever group of authors wrote the Koran) that Muhammad conversed with the angel Gabriel, and there’s signed “testimony” by eleven of Joseph Smith’s friends and relatives that they saw the golden plates of the Book of Mormon. Somebody’s gotta be kidding! Surely no one in his or her right mind would accept such reports as the desired confirmation to within 1 part (i.e., 1 doubter) in 10^{125} (or even 1 part in 10^{25} or, for crying out loud, give us at least only 1 doubter in 10^{10} people).

In contrast, doubters abound! Thus, in the case of the “miracles” claimed to be performed by Moses, the Bible reports that after the people had seen “stuff” the likes of which has never since been seen (turning the Nile to blood, killing off all the Egyptian first-born, parting the Reed Sea, getting “manna” from Heaven, and so on), yet after Moses had been gone for a couple of days on the mountain, ALL the people abandoned him, explicitly as given at *Exodus 32, 1*:

When the people saw that Moses was so long in coming down from the mountain, they confronted Aaron [Moses’ brother] and said to him, “Come, make us gods to go ahead of us. As for this fellow Moses, who brought us up from Egypt, we do not know what has become of him.”

That is, there wasn’t a single “believer” among them (reportedly to be 600,000 men; say, roughly, 10^6 people) – not even his own brother! Thus, not only wasn’t there confirmation to within 1 part in 10^6 (i.e., only one doubter among them), there was only one believer (Moses) in a million!³

Jesus apparently faired a little better – but not much. Thus, in the case of the “miracles” allegedly attributed to him (including the sky darkening when he died and confirmation, even for “doubting Thomas”, that Jesus came back to

³ Incidentally, Dear, you can see from this example (just as for the example in the previous chapter in which you were assumed to serve on a jury) that sometimes it’s more convenient to use odds rather than probabilities. Recall that the “odds” of any outcome are defined as (“favorable outcomes”) ÷ (“unfavorable outcomes”), so that upon dividing numerator and denominator by “total outcomes”, it’s seen that when the probability is small, odds are essentially the same as probabilities, and when the probability is very close to unity (e.g., “confirmation to within 1 part in 10^{25} ”), then the odds are essentially the same as the reciprocal of the probability that the proposition is false. Thus, in the case of “confirmation” of Moses’ miracles, rather than finding the odds that the claims are true to be at least 10^{25} , the evidence given even in the Bible suggest that the odds for the claim that the miracles are true are approximately 10^{-6} – and if ever you bump into odds like that, Dear, then unless the payoff is huge, don’t bet on them!

including a host of mental illnesses]. In due course in this book, I'll dig into many of the details, but for this chapter, my plan is to focus on just a few of components in the "personal" category.

To start on my comments about "personal beliefs" in various gods, let me return to the definition of "belief" as given by Webster:

belief **1.** the state of believing; conviction or acceptance that certain things are true or real **2.** faith, especially religious faith **3.** trust or confidence {I have *belief* in his ability} **4.** anything believed or accepted as true; especially, a creed, doctrine, or tenet **5.** an opinion; expectation; judgment {my *belief* is that he'll come}

The first and fourth definitions (containing "acceptance that certain things are true or real" and "accepted as true") mean that such "beliefs" are equivalent to accepting that the probability (of some proposition or event) is unity. In my opinion, however, Alan Watts got closer to truth when he pointed out that the Anglo-Saxon root 'lief' means 'wish'; therefore "belief" can mean "wish to be." I therefore conclude that people who express "beliefs" are sometimes not expressing "just" estimates of probabilities but estimates of hope = expected value = value x probability.

To see what I mean, Dear, try it out. If I asked you if you "believe" it'll rain today, you might say "I doubt it", you might say, "There's only a 10% chance", or you might say "I certainly hope not!" Thus, although I asked about your "belief", yet you responded with a description of your hope. Similarly, if you asked your mother if she believes in God, her assumed response, "Certainly!", is surely not her best estimate for the probability of God's existence (which by my estimate is less than 10^{-200}), but her "hope" for the existence of God, i.e., her estimate of the expected value (to her) of God's existence, which is her estimate for the probability of God's existence (whatever that estimate might be) multiplied by her perception of the value of God's existence to her.

If that idea is somewhere near being correct, then it stimulates the question: Why do people place so much hope on the existence of God? I mean, all other things being equal, who cares if "total nothingness" popped this universe into existence [with probability $\sim 10^{-40}$ (or 10^{-440} !)] or went straight to popping a full-fledged god into existence [with probability somewhere in the range of 10^{-200} to $10^{-10,000}$]?

* Go to other chapters *via*

Well, obviously multi-billions of people do care, so obviously they've put a huge value (to them) on there being a God. And no doubt equally obvious is that such people are seeking to win what's called Pascal's wager. Thus, with hope = expected value = (value of the return on the wager) x (probability of winning), then even if the probability of winning is comparable to the miniscule probability that God exists (e.g., say 10^{-200}), yet with the value of "eternal life in paradise" (or whatever the clerics promise) judged to be much greater than the inverse of the probability that God exists (e.g., say, $\$10^{400}$), then no wonder that so many people "believe" = "hope" that God exists (and that he'll favorably reward them for being "good"): such a hope has expected value of, say, $10^{-200} \times \$10^{400} = \10^{200} , a sum that would make even Bill Gates, with his measly fortune of \$40 billion, drool with envy.

But, Dear, it's easy to see that Pascal's wager is an extremely unwise gamble. In a later chapter (Y6, dealing with "Your Hopes and Their Priorities"), I'll go into details about why engaging in Pascal's wager is unwise. Here, let me just outline the reason, which in turn can be encapsulated in a trio of what I trust you'll agree are obvious (and obviously sound) policies:

- Don't bet on a game for which the rules aren't clear,
- Don't place a bet when you don't know how, and
- Don't place a bet with a bookie you can't trust.

To explain what I mean, let me give you a "for instance".

For instance, suppose you decided that "eternal life in paradise" was an attractive prize (even though there's a lot of people who obviously think otherwise, e.g., those who are bored even with their lives of finite duration and some who are so dissatisfied with their lives that they commit suicide). Suppose, then, that you decided to "go for it", willing to "invest" whatever's required to win the giant lottery in the sky. Thereby, you would have convinced yourself to buy into with what is essentially Pascal's argument: "Shucks, even if the probability that there's a God is only 10^{-200} , with eternal life in paradise easily worth $\$10^{400}$, I stand to win $\$10^{200}$!" So, you look around to find out where you can buy a "lottery ticket" and how much it costs – and run into major problems:

- You check out the oldest religion still thriving, and Hindu clerics (called Brahmins) tell you: "Don't sweat it, everyone lives forever; you've

already been living forever; you just don't remember your previous incarnations: just live this life as best you can, because your performance in this life dictates the form for your next reincarnation; it's called karma; for example, it's bad karma not to be generous toward the Brahmans."

- Next, you check out Judaism, and their clerics (called rabbis) don't seem to know. Although you get hints that some of them think there's an afterlife, about the only thing they seem to agree on is that, if you live your life according to rules laid out in the Old Testament, then the Jewish "race" will thrive. And of course they also point out that one of the principal rules is to make sure that the rabbis are kept well.
- So you then check out Buddhism, Confucianism, and Taoism, but find that they're not really religions: not only do they make no mention of an afterlife, they dismiss all talk of gods as mindless chatter.
- So next you check out Christianity, and though you thought that you knew the Christian rules-of-the-game, you're stunned by the variations promoted by different groups of clerics (variously called priests, pastors, chaplains, deacons, vicars, ministers, elders, whatever). They all agree that you're to do good and not evil, but some advise you, for example, that it's good to have lots of babies and if necessary to go to war for your country, while others tell you that those same things are evil. But at least they all agree that it's good to pay them for their advice; it's called tithing.
- You then check out Islam and find that their clerics (called Imams and Mullahs) are divided into two major groups (the Shiites and the Sunnis), but there are major subgroups within those two groups (such as the Wahhabis, an ultraconservative Sunni group that's being rapidly spread throughout the world, courtesy Saudi Arabia's oil wealth). But they all seem to agree that an eternity in paradise (or in hell) is yours for the choosing, providing that you agree to play by their rules – which of course includes your paying your tithes to them. Yet, maybe you'd be discouraged by their rule that if you should join them and then later decide to drop out (i.e., "apostatize" or become an apostate), they'll issue a ruling (a "fatwa") to have you killed.

Confused by so many choices (and of course there are many more, including Mormonism), you then stumble across someone who advocates still another:

“Look,” says he, “it’s clear that the clerics of all organized religions are just promoting their own versions of the same con game. Meanwhile, though, I had a chat with God, and he let me in on the real skinny. He said that he purposefully flooded the world, but not with water, with words! He said that eternity is a real bore and what he’s looking for is a few intelligent people who can think for themselves – who can bring something original to his table. So he developed a test: he said that those who buy into any clerics’ con game fail the test; their remains are just recycled in the environment, for use by later candidates. The few who think for themselves, the few who demand to see data, the few who conclude that there’s no evidence that any god ever existed, the few who choose to live their lives the best way they can, using their brains as best they can, the few who work hard to solve the world’s problems intelligently, the few who thereby help intelligent life continue are the chosen few.”

So then, Dear, I trust you see the fallacy in Pascal’s wager: although you may conclude that the expected value (the hope) of eternal life is enormous [(expected value) = value x probability = (perhaps) $\$10^{400} \times 10^{-200} = \10^{200}], yet without knowledge, you can’t rationally decide how or where or what to bet. Consequently, the only sensible conclusion (when the rules aren’t clear, when you don’t know how to place your bet, and when you can’t trust any bookie) is to refuse to play the game – except by your own rules, which you need to figure out for yourself.

And thereby, Dear, maybe you see why I reject (and even resent) being labeled an “atheist”: I’d prefer to be described as someone who has at-least-a-little skill in estimating probabilities – and who knows enough not to place good money (or more) on a very bad bet. In contrast, people who live their lives (or, worse, destroy their life and the lives as others, as well, e.g., as suicide bombers) betting on the “long shot” of any god’s existence – the longest of all conceivable long shots! – are (to be blunt) bonkers. The least that such people should do is seek out the tiniest shred of data to support their speculations, both about the existence of any god and about which set of clerics (if any) is running an “honest game” – all of which seem suspiciously similar to a classic (the classic!) con game. In contrast, I and fellow humanists (or “Brights”) put our money (and more) on the proposition (supported by an enormous amount of data) that the most intelligent life-form discovered in the universe (to date) is fellow humans –

although if human intelligence is to evolve, obviously substantial work is needed to help more people “Brighten up.”

Which then leads to the obvious question: Why do people do it? Why do people buy into what has all the characteristics of being a bunch of con games, promoted by various competing groups of con-artist clerics? And though there are many answers to that question (as I’ve already suggested and will dig into details in later chapters), yet obviously a major reason why people buy into specific con games is simply childhood and cultural indoctrination – indoctrination in bad science, indoctrination in ignorance.

To try to explain what I mean, let me first back up. When I started these **I**-chapters with my summary assessment that “Belief in god is bad science...”, you might have responded (as I already suggested) with the claim that “belief in God doesn’t have anything to do with science.” And actually, I might agree you – but NOT for the reasons that I expect would have been your reasons for making the claim. I expect that your reasons would conform to the propaganda preached by essentially all clerics: that an individual’s relationship with God is a matter “of the heart”, not “of the mind”; that devotion to God is a “feeling”, which the individual “knows” is “true”; that the concept of God is beyond the province of science, and therefore, that a scientist has “no business” talking about God.

What rot! It would be more appropriate to argue that clerics have “no business” talking about religion – because what they call “religion” is, in fact, nothing but silly science, concocted by savages. I’ll show you some history of this “silly science” in the “excursion” **Ix** that’s appended to these **I**-chapters (where the “x” stands for “excursion”). Here, therefore, let me just outline the silly science preached by clerics, next outline ways that they hoodwink people into buying into their silly science, and then urge you to be careful not to be similarly hoodwinked. In particular, I’ll urge you to be selective in whom you grant trust and in what you place your confidence – of course urging you to try to develop trust in yourself and suggesting why confidence in the scientific method is justified.

To begin to try to explain what I mean, Dear, please consider the clerics’ contention that belief in god has nothing to do with science:

- First, think again of what science means (i.e., knowledge), and then think of what’s claimed by all clerics: that they “know” that this universe was

created and is controlled by their god (or gods), that “he” dictated rules by which people are to live, and that when people die, “he” will judge them for how well they conformed to “his” rules. Of course, the clerics simultaneously admit ignorance of many details (about all “his” wonders, for doncha know, “God works in mysterious ways”), but obviously they’re sufficiently confident to require that followers pay them tithes for their imparting such “knowledge”!

- Next, think again about how all knowledge of the universe is gained (via the scientific method: by observing, analyzing data, formulating testable hypotheses, testing them, and so on, without end), and then look again at Chapter **Id** (dealing with “Digging into the God Idea”) to see how untenable is “the god hypothesis”. It’s definitely bad science!
- Then, think again about all the “proofs of God’s existence” that I showed you in Chapter **Ie**. All such proofs (starting with Aristotle’s and continuing through to Pope John Paul’s) attempt to “prove” the “truth” of their “scientific model” of life and this universe. I certainly hope that you noticed that all such “proofs” are riddled with errors, Dear, but more relevant to the point I’m now trying to make, notice that all such “proofs” are no more than attempts to “prove” scientific models solely by use of logic (rather than by applying the scientific method!), which as I’ll show you in more detail later (e.g., in **R**, dealing with Reason) is silliness in its extreme.

Let me try to put that last point differently. As I’ll show you in detail in **S** (dealing with Scientific Models), the goal of science is to “build” various (physical, mental, mathematical, numerical...) models of various process, out to an including models of how this universe “works”. Well, Dear, that’s precisely what all the clerics of the world have done: they’ve concocted and they promote various “models” of how the universe works. The Roman historian and philosopher Plutarch (46 – 120 CE) said similar:⁴

It clearly results from the verses of Orpheus and the sacred books of the Egyptians and Phrygians, that the ancient theology, not only of the Greeks, but of all nations, was nothing more than a system of physics, a picture of the operations of nature, wrapped up in mysterious allegories and enigmatical symbols, in a manner that the ignorant multitude attended rather to their apparent than to their hidden meaning, and

⁴ Copied from *The Ruins* by Volney, who in turns gives the reference: “Fragment of a work of Plutarch now lost, quoted by Eusebius, *Proepar. Evang. lib. 3*, ch. 1, p. 83.”

even in what they understood of the latter, supposed there to be something more deep than what they perceived.

That is, throughout history, in all their models, the clerics have attributed the working of the universe to various gods. Therefore, it's not your old grandfather but all the clerics of the world who claim that they're doing science, and to put it bluntly: their science sucks.

In his 1929 book entitled *The Story of Religious Controversy* (available at, e.g., <http://www.holysmoke.org/an/tan07.htm>), the ex-cleric and excellent author Joseph McCabe used more “politically correct” language to say something similar [to which I've added some notes in “square brackets”]:

One by one the old arguments [for the existence of God] have been discredited. There were the early philosophical arguments, the proofs of a First Cause and Prime Mover, and so on. Modern philosophy entirely rejects them, and it is the philosophers who best know their value. Then there was the order of the heavens, and modern astronomy has made an end of this argument. The idea that such beauty as there is in nature testified to a God has been equally discredited by evolution. The argument from design has been shattered in the same way.

Science gives us a natural interpretation of nature. It is very far indeed in its present stage from explaining everything, but to take some part of nature which is at present obscure and say that the hand of God must be there is a very poor fallacy [*Argumentum ad ignorantium*]. It is quite obvious that our ignorance of the natural causes may be, and in view of the history of science probably is, only temporary.

A few moments' reflection will show you the fallacy of all these arguments and explain why men in their search for God have been driven by science from one department of nature to another. For such an inference to be valid, you must prove, not merely that science cannot today explain this or that phenomenon in nature, but that it will never furnish a natural explanation of the phenomenon, because such an explanation is impossible. Who will venture to attempt that?”

In a little more detail, let me put it this way. First, Dear, think about “believing in” (in the sense of “liefing for” or “wishing for”) any type of “supernatural”. As Spinoza detailed,⁵ “supernatural” is a meaningless concept: as it's commonly used, take the word ‘nature’ to mean everything that exists; then there's nothing left to be “super” natural! This led Spinoza to conclude (as did Pindar, about 2,000 years earlier) that God is everything.

⁵ Dear: I don't remember which of Spinoza's books contains the concept outlined in this paragraph, but if you'll skim some of his books (which I hope you'll do; and I say “skim” because they're quite difficult to read), I'm sure you'll find it.

But as criticism of both Pindar and Spinoza, I would ask: what's the point of introducing the separate name "God" when the word 'everything' or 'nature' is completely adequate? That is, if by the word "God" is meant a "supernatural being", then the word "God" is meaningless, and if by the word "God" is meant 'everything', then thanks anyway, but the rest of us call it 'nature'!

When asked, Einstein said that his god would be similar to Spinoza's, but he later clarified his statement:

It was, of course, a lie what you read about my religious convictions, a lie which is being systematically repeated. I do not believe in a personal God and I have never denied this but have expressed it clearly. If something is in me which can be called religious, then it is the unbounded admiration for the structure of the world so far as our science can reveal it.

Even "Saint" Paul, the founder of Christianity (and, as I'll be showing you, therefore the founder of the Mormonism) saw that God was little more than nature. In the New Testament (*Acts 14, 17*), Paul describes God as follows:

In past ages he [God] allowed all nations to go their own way; and yet he has not left you without some clue to his nature, in the kindness he shows: he sends you rain from heaven, and crops in their season, and gives you food and good cheer in plenty.

The rest of us call Paul's god 'nature'!

Paul said similar when he gave what we would call a seminar to the Greek philosophers of his time (the Epicureans and Stoics, about whom I'll write more, in later chapters). At *Acts 17, 28-29*, Paul reportedly said at the seminar:

...in him [God] we live and move, in him we exist; as some of your own poets have said, "We are also his offspring."

According to subsequent statements in the Bible, the assembled philosophers found no fault with those statements, for a statement such as "in him we live and move, in him we exist" is certainly acceptable if one interprets "him" to be nature – in whom (or in which) we do "live and move" and in which "we exist". But then it's reported (*Acts 17, 32-34*) that the assembled philosophers "scoffed" when Paul started talking about dead people coming back to life, diplomatically dismissing him with: "We will hear you on this subject some other time."

Yet, apparently a huge number of people apparently do “feel a need to believe in god” – and even to believe that dead people can come back to life. For example, you’ve probably heard the question similar to: “If God didn’t create the universe, then who did?”

But be careful of questions like that, Dear, because they’re loaded with assumptions. For example, there’s the assumption that someone made the universe? Much more likely, it seems, is that our universe made itself – for if you assume that the universe was made by some god, then if you’re honest with yourself (and not a blithering idiot), you must tackle the next obvious questions: how and by whom was this god made?! Besides, there’s a string of more fundamental questions (some of which I’ll address later) about what space and time actually are. In addition, there are other major questions: What makes the questioner think that humans have yet found answers to all such questions? What makes the questioner think that, if we haven’t yet found the answers, then we should “worship” the unknown? I mean, making the argument from ignorance (*argumentum ad ignorantium*) fallacy is bad enough; why compound the problem by becoming religious, worshipping ignorance?!⁶

In later chapters, I’ll address such questions in some detail; here, let me just give you a very brief outline of three of my responses.

- First, relative to the question of how the universe was created, evidence is now becoming available that the universe created itself, with the creation being manifested in “the Big Bang”, but with its cause, in turn, possibly a symmetry-breaking quantum fluctuation (or as I’ll call it in **Z**, a “zigblat fluctuation”) in a total void (not a vacuum, Dear, a total void; i.e., total nothingness).
- Second, asking about what was before “the beginning” displays an unjustified assumption about time: instead, quite likely, time itself started with “the Big Bang”.

⁶ In turn, though, that thought suggests an explanation for why usually it’s the most ignorant who are the most religious (as found in recent polling data, e.g., that “belief in God” decreases with increasing education). Thus, the greater a person’s ignorance, the more he or she finds to worship!

- Third, asking about “the purpose” of the universe displays an unjustified and almost certainly incorrect reflection of human values onto the rest of nature: all that lives has a purpose (to continue living!), but there is no known “purpose” for stones, stars, and the rest of the universe.

And I’m sorry if those suggestions are too brief to convey much meaning, Dear, but on the one hand, I already asked for your patience (when I introduce topics and then quickly drop them, promising to return to them in later chapters), and on the other hand, surely you’re not going to accuse me of brevity!

Meanwhile, of course all such questions are “answered” in the myths of all religions. But surely even all religious people realize that all myths (at least all myths of all other religions!) are nothing but fanciful stories, made up by primitive people. Further, Dear, if you will take a broader view, surely you’ll see that the myths of all religions explain nothing and contain no knowledge (except in so far as they tell us something about the primitive people who created the myths and their many gods). In particular, as I’ll show you in some detail in the “excursion” **Ix** (a series of chapters that follow, all dealing with exploring the origins of ideas of gods and souls), all “creation myths” fail to satisfactorily address the three critical questions: (i) How was the assumed creator created, (ii) What was occurring before “the beginning”, and (iii) What was the creator’s purpose?

Also, Dear, I hope that you’re getting a glimpse of a picture in your mind, details of which I’ll start showing you in **Ix**, but it’ll take me much of this book to describe in what I consider to be appropriate detail: all clerics are nothing but professors of primitive science – “scientific” models that were first concocted by prehistoric savages and then refined and ritualized thousands of years ago, in the main by the Ancient Egyptian, Mesopotamian, and Persian priests!

To illustrate, let me start with a variation of the quotation (source unknown): “You can always tell when politicians are lying: their lips move!” My variation is: you can always tell when clerics are speaking from ignorance: they speak! For example, consider the following Associated Press news report (Sunday 19 January 2003 5:20 PM):

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VATICAN CITY (AP) – Pope John Paul II urged Catholics on Sunday to send their children to Catholic schools, saying the education will help the young confront the “big questions of existence”.

The pope made the comments during his regular Sunday appearance to pilgrims and tourists in St. Peter’s Square. Among those gathered this week were students and teachers from several Catholic schools in Rome.

“While I thank those who live and work in Catholic schools, I hope that every family has the concrete possibility of choosing for their children this type of school,” the pope said.

Catholic schools can help children “confront in a positive way the big questions of existence,” he said.

What ignorance! The only way to “confront in a positive way the big questions of existence” is to formulate hypotheses with testable predictions and determine experimentally if the predictions are validated: kick the tree, if it hurts your foot, proceed with the useful working hypothesis that it exists –don’t start banging your head against it!

Later, when I get to the second half of my summary response (viz., the part of “Belief in god is bad science and even worse policy” that deals with policy), I’ll try to show you some serious consequences of permitting these “professors of primitive science” (clerics) to pollute the minds of children and childish adults with such naïve ideas – consequences that range from personal immorality to war. But for now, Dear, maybe you’d like to indulge yourself in a little of the humor of it all: high priests in their lavish temples and commonly dressed in elaborate frocks and wearing comical “dunce caps” solemnly and ritually teaching their followers “scientific principles” of astronomy, biology, cosmology, dermatology, ecology, fungicology, geology... zoology, developed in the main by the Ancient Egyptians!⁷

⁷ Dear: if you’re wondering why I threw in the “made-up” word “fungicology” (besides my trying to find some scientific enterprise that started with the letter ‘F’ and realizing that there aren’t many descriptions of forestry in the Bible!), then maybe your exposure to the Bible needs to be expanded (which I’ll try to remedy in later chapters). In particular, see *Leviticus 14*, 49, where Moses gives unequivocal methods (developed by the Ancient Egyptians) for ridding houses of molds and similar “impurities”. Oh, and remember, no laughing, ’cause this is serious stuff – direct from God Almighty Himself (I guess before He invented Lysol): “In order to rid the house of impurity, he [a priest] shall take two small birds, cedar-wood, scarlet thread, and marjoram. [Whatever that is! Maybe you could use a mixture of margarine and jam!] He shall kill one of the birds over an earthenware bowl containing fresh water. He shall then take the cedar-wood, marjoram, and scarlet thread, together with the living bird, dip them in the blood of the bird that has been killed and in the fresh water, and sprinkle the house seven times. Thus he shall purify the house...”

Stated differently, Dear, if you have the amazing perseverance to finish reading this book, I hope you'll clearly see that "the god idea" is a model of the universe (and our place within it) that was conceived by savages and that's now promoted by dimwit clerics (for their own profit, prestige, and power). Yet, in a way, all the dimwit clerics of the world deserve credit for so successfully marketing their primitive models.

There are many reasons for their successes (which, as I'll be showing you, include bribery, corruption, propaganda, monopolistic practices, indoctrinating children, torturing, terrorizing, and murdering opponents, and so on), but for the moment, let me focus on a single stunning feature of their primitive scientific model of the universe: it's so deliciously simple! Even a child can understand it: "God made the universe, and if you're good, you'll have eternal life in paradise."

Further, obviously a huge number of people find the clerics' "scientific model" to be both sufficiently satisfying and sufficiently challenging for their intellectual capabilities. But then, Dear, don't forget the obvious fact that half the people have below average intelligence. And thereby, I admit to my sadness when I recently saw (on a TV news report) a primitive human emerge from a hospital (I think in Tennessee) after some successful, "miraculous" surgery (maybe it was a heart transplant) to inform the assembled members of the press: "I asked the doctor if he believed in God; he said 'yes'; so I knew the operation would be successful, because I was in God's hands. Praise the Lord." And come to think of it, I admit not only sadness but even some praise for all dimwit clerics: they've adopted and promote a primitive scientific model that permits equally dimwitted people to imagine that they're wise.

Let me show you M.M. Mangasarian's similar assessment, given in his 1909 book *The Truth About Jesus; Is He A Myth?*

When we subject what are called "religious truths" to the same tests by which we determine scientific or historical truths, we discover that they are not truths at all; they are only opinions. Any statement which snaps under the strain of reason is unworthy of credence.

But it is claimed that "religious truth" is discovered by intuition and not by investigation. The believer, it is claimed, feels in his own soul – he has the witness of the spirit that the Bible is infallible and that Jesus is the Savior of man. The Christian

does not have to look into the arguments for or against his religion, it is said, before he makes up his mind; he knows by an inward assurance; he has proved it to his own deeper-most being that Jesus is real and that he is the only Savior.

But what is that but another kind of argument? The argument is quite inadequate to inspire assurance, as you will presently see, but it is an argument nevertheless. To say that we must believe and not reason is a kind of reasoning.

This device of reasoning against reasoning is resorted to by people who have been compelled by modern thought to give up, one after another, the strongholds of their position. They run under shelter of what they call faith, or the “inward witness of the spirit”, or the intuitive argument, hoping thereby to escape the enemy’s fire, if I may use so objectionable a phrase. What is called faith, then, or an intuitive spiritual assurance, is a species of reasoning; let its worth be tested honestly.

In the first place, faith or the intuitive argument would prove too much. If Jesus is real, notwithstanding that there is no reliable historical data to warrant the belief, because the believer feels in his own soul that He is real and divine, I answer that the same mode of reasoning – and let us not forget, it is a kind of reasoning – would prove Muhammad a divine savior, and the wooden idol of the savage a god. The African Bushman trembles before an image, because he feels in his own soul that the thing is real. Does that make it real? The Moslem cries unto Muhammad, because he believes in his innermost heart that Muhammad is near and can hear him. He will risk his life on that assurance. To quote to him history and science, to prove that Muhammad is dead and unable to save, would be of no avail, for he has the witness of the spirit in him, an intuitive assurance, that the great prophet sits on the right hand of Allah. An argument which proves too much, proves nothing.

Such “believing with one’s heart”, promoted equally by the Christians, Muslims, and Mormons, was also promoted by the Nazis. In his 1951 book *The True Believer* (which I encourage you to read), the “longshoreman philosopher” Eric Hoffer summarized it well:

It is startling to realize how much unbelief is necessary to make belief possible. What we know as faith is sustained by innumerable unbeliefs: it is the true believer’s ability to “shut his eyes and stop his ears” to facts that do not deserve to be either seen or heard which is the source of his unequalled fortitude and constancy. He cannot be baffled by contradictions because he denies their existence. Thus the effectiveness of a doctrine should not be judged by its profundity, sublimity, or the validity of the truth it embodies, but by how thoroughly it insulates the individual from his self and the world as it is. It is obvious therefore, that in order to be effective a doctrine must not be understood, but has to be believed in. We can be absolutely certain only about things we do not understand. The devout are always urged to seek the absolute truth with their hearts and not their minds. Rudolf Hess, when swearing in the whole Nazi party in 1934, exhorted his hearers, “Do not seek Adolf Hitler with your brains, all of you will find him with the strength of your hearts.” The less justified a man is in

claiming excellence for his own self, the more ready is he to claim all excellence for his nation, his religion, his race or his holy cause. Faith in a holy cause is to a considerable extent a substitute for the lost faith in ourselves...

Maybe some day such stupidity will be eliminated. But for now, Dear, in this book, “all” I want to try to do is help you (and other children) realize the silliness of the clerics’ scientific models and to consider alternative models that science has developed – during the subsequent 5,000+ years! The root-problem with the clerics’ simple models (leaving alone, until later chapters, the monstrous personal and social problems they have caused and continue to cause) is that, as models, they’re so simple they’re simplistic. As I mentioned in an earlier chapter, their models “explain” nothing; they just camouflages ignorance behind their meaningless word “God” – which is an abbreviation for “I dunno”!

Meanwhile, though, as I’ll begin to demonstrate in the next series of chapters (in **J** through **Q**, dealing with policies), my sadness of the stupidity of it all evolves into anger, when I reconsider all the harm to humanity that religions have caused and continue to cause. It’s one thing for groups of silly people to get together to chant that their primitive scientific model of the universe is the only one that’s “true”, but it’s a horrible step beyond that ignorance when such people not only claim that other (equally silly) models are wrong but also that the people who “believe” in alternative models are “evil”. Oh, there’s evil all right, but its source is the people’s ignorance.

But if you’re unconvinced by what I just finished writing, Dear, then again I ask you to be patient with me. Recall that, near the start of these **I**-chapters, I asked for a “double dose” of your patience: once when I introduced a topic and then didn’t finish explaining it, and then later, when I introduce the same topic in later chapters, to go into it in more detail. Thus, Dear, I haven’t finished describing all that I plan to show you about how silly “the god idea” is (I’ll be “harping on” the same idea in many future chapters!), but from the prior chapters in this group, I hope you’re beginning to understand my summary statement “Belief in god (any god) is bad science...”

That said, let me turn to an observation and two questions that the observation evokes, questions that I hope you’ll consider seriously – because if you will seek the answers, I expect that they’ll have major influences on the ideas that you accept and therefore on your life. The observation is this: silly, primitive (even pre-historic) “scientific” models of the universe are

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propagated, generation after generation, in all religions of the world (Hinduism, Judaism, Christianity, Islam, Mormonism, etc.). The two questions that I hope that you'll then consider are: How? and Why?

Now, Dear, those are simple questions, but as you probably know, answers to simple questions can be complicated. To show you some answers to “the why question”, I intend to dedicate many chapters, including all of them from **J** through **Q**, dealing with “policies”. But to make a very long story short (and therefore incomplete), let me summarize by saying that the reason “why” such silly science is propagated is various combinations of especially the following factors:

- Desires of people, worldwide, for simple and satisfying answers to complicated questions (such as “Why are we here? What is this universe? What happens when we die?”),
- Schemes of political leaders, worldwide, to use religion to steer the people in directions chosen by the politicians [from King Hammurabi, Pharaoh Amenhotep IV (or Akhenaton), “Prince” Moses, “Saint” Paul, the “butcher Emperor” (“Saint”) Constantine, the “prophets” Muhammad and Joseph Smith, to Bin Laden and George W. Bush], and
- Worldwide designs of clerics (who, in many countries, are also the politicians) for power over the people and for the associated privileges that the clerics then exploit.

Yet, with that last clause, I don't mean to paint all “spiritual leaders” with the same damning brush.

Thus, Dear, I know of no evidence that would support suggestions that the Buddha (“the awakened one”, Siddhartha Gautama, c. 563 – 479 BCE), Confucius (or Kung-fu-tse, i.e., “the master Kung”, 551 – 479 BCE), Socrates (469 – 399 BCE) or even Jesus (“the Christ”, i.e., “the enlightened one”, c. 6 BCE – c. 26 CE – if he existed) were “power mongers” – beyond their apparent desires to influence the thoughts of others. But let me add that I purposefully labeled such people as “spiritual leaders” rather than “religious leaders” or “clerics”, because there's no evidence that any of them

(including Jesus) sought to establish an organized religion. In fact, I would praise at least the first three of them by describing them as humanists.⁸

To support my praise of the humanists, let me show you a few samples of statements by the indicated people.

Buddha: “Hurt not others in ways that you yourself would find hurtful... For hatred does not cease by hatred at any time: hatred ceases by love – this is the eternal law... Be lamps [or islands] unto yourselves. Be a refuge unto yourselves. Do not turn to any external refuge... Owing to their creation of a Supreme Deity, men will become murderers, thieves, unchaste, liars, slanderers, abusive, babblers, covetous, malicious, and perverse in views. Thus for those who fall back on the creation of a God as the essential reason, there is neither the desire to do, nor the effort to do, nor necessity to do this deed or abstain from that deed... ”

Confucius: “What you do not want done to yourself, do not do to others... Recompense injury with justice, and recompense kindness with kindness... When we see men of worth, we should think of equaling them; when we see men of a contrary character, we should turn inwards and examine ourselves... While you are not able to serve men, how can you serve spirits?... While you do not know life, how can you know about death?

Socrates: “I am not an Athenian or a Greek, but a citizen of the world... There is only one good, knowledge, and one evil, ignorance.”

In contrast, it seems that the historical Jesus (if there was one) may have been insane (as concluded by his mother, brothers, and some others who knew him, and as inferred from the mysticism that he allegedly adopted). In any case, based on what seems to be his original statements, his mental development appears to be not much beyond that of a modern child. For example, I knew certain grandchildren who, when they were younger, could have easily have made a more-complete pronouncement than Christ’s reported statement (as given in the Gnostic’s *Gospel of Thomas*): “Give the emperor what belongs to the emperor [which appears in the New Testament as “give Caesar what is Caesar’s”]; give God what belongs to God.” My grandkids would have added: “and give me what’s mine!”

⁸ Actually, Dear, as I’ll show you in later chapters, the similarities (even identities) between the reports about the Buddha and the stories about Jesus suggest that many of the latter were fabricated from stories about the Buddha; also, many of the statements attributed to Jesus were copied from existing Jewish literature; therefore, a case can be made (and has been made) that Jesus was an entirely fictitious character (similar to William Tell), although based on my reading of relatively recently found “Gnostic Gospels”, I expect that he did exist and spent a few of his adult years as a wandering, skeptic, philosopher.

But setting details about Jesus and other “spiritual leaders” aside for later chapters, let me summarize my response to “the why question” by saying that, in total, the answer is neither neat nor pretty. As I’ll try to show you in later chapters, organized religions and associated politics are, in general, little more than organized ignorance and power mongering, leading stupid people into greater ignorance. What for me was a startling example is the following quotation from an “op-ed” column by Nicholas Kristof entitled *Overdosing on Islam*, which appeared in the 12 May 2004 issue of *The New York Times*:

Another Shiite leader outside the club of power [in Iran], Ayatollah Jalaedin Taheri, has denounced the [Iranian] regime as “society’s dregs and fascists who consist of a concoction of ignorance and madness... [and] those who are convinced that yogurt is black.”

I tip my hat to that Ayatollah, but would add that similar is appropriate to describe not only the current leaders of Iran but also all past, present, and undoubtedly future leaders of all organized religions: “society’s dregs and fascists who consist of a concoction of ignorance and madness... [and] those who are convinced that yogurt is black.”

In this book, I’ll allocate many later chapters to explain what I mean by saying, in particular, that “Christianity is childish, Islam is infantile, and Mormonism is moronic.” But delaying the justification of that statement until later chapters, let me turn from “the why question” to “the how question”: How are such religions (such “simplistic science” – such “concoctions of ignorance and madness” – such childish, infantile, moronic models of the universe – such clearly invented balderdash – such garbage) propagated, perpetrated, and perpetuated, generation after generation?

Now, Dear, once again the answer to such a simple question is complicated, and once again I’ll need to ask for your patience. In later chapters (e.g., in **X1**, dealing with “EXposing Ignorance”, **X2**, dealing with “EXcavating Reasons”, and **X3**, dealing with “EXamining Reasons”), I’ll try to show you some of the many ways people “get religion”, including:

- From the people having a “burning desire” to “know” (e.g., “the purpose of it all”) to “doing anything” to avoid some fear (especially of death);
- From the people following “herd instincts” (and therefore “joining the crowd”) to making logical errors (as did Aristotle and your father); and

* Go to other chapters *via*

- From the people having their minds “warped” by hallucinatory drugs (which have been available for at least the past 10,000 years!) to those who succumbed to some mental illness – as in the case of Zoroaster (whose crazed ideas are at the base of both Christianity and Islam and therefore of Mormonism), possibly Jesus, almost certainly “Saint” Paul (who was the most important author of the New Testament and who probably had bipolar epilepsy), probably (by his own admission) the “prophet” Muhammad (who allegedly dictated the Koran and labeled himself as “the mad poet”), and most likely Sidney Rigdon (who almost certainly was the author of the Book of Mormon, who had a serious head injury when he was a child, and who at least twice suffered complete mental breakdowns when he was under stress).

For the rest of this chapter, however, I want to address only one way that people “get religion”, both because it’s probably the dominant way that people become religious and because it’s what you (and your mother and all your grandparents) experienced: we were indoctrinated by our parents – because we misplaced our trust and confidence in them.

I describe such childhood indoctrination as “probably the dominant way for most people... to get religion”, Dear, because consider the data that this hypothesis summarizes and consider the testable predictions it provides. If you are a “full-fledged” Mormon, isn’t it because your parents were? And if you continue to be a “full-fledged” Mormon and if you have children, then isn’t it likely that your children will also be Mormons? Isn’t the same generally the case for Anglicans, Baptists, Catholics,... as well as for Hindus, Muslims, and Jews? Surely you agree that you aren’t a Mormon because you considered all other religions and then decided that Mormonism was “best”. Oh, you may now think that it’s “best”, but I dare you to consider: “Why?”!

Dear: please think about what happened to you. Similar to most children (even to your grandmother and me, when we were kids!), you’ve been trained by the people whom you had to trust most (to promote your own survival), i.e., by your own parents, to “believe” what they tell you is “the truth” and to “have faith” in the “knowledge” they imparted to you. But, Dear, now that you’re leaving the daily protection of your parents, you must take responsibility for yourself – of course including responsibility for what you think. And to summarize what will take me most of this book to

explain, let me not only repeat that “Belief in god is bad science and even worse policy” but also add that what I very much hope for you, Dear, is that you will gain sufficient strength to replace your misplaced ‘belief’ in God and ‘faith’ in your religion (derived from misplaced trust and confidence in your parents) with confidence in the scientific method and with trust in yourself.

To help you in your decision, please consider the following written by the American author and publisher E. Haldeman-Julius (1889–1951):

Look at the God idea from any angle, and it is foolish; it doesn’t make sense, but extravagantly proposes more mysteries than it assumes to explain. For instance, is it sensible that a real God would leave mankind in such confusion and debate about his character and his laws?

There have been many alleged revelations of God. There have, indeed, been many Gods as there have been many Bibles. And in different ages and different lands an endless game of guessing and disputing has gone on. Men have argued blindly about God. They still argue – just as blindly.

And if there is a God, we must conclude that he has willfully left men in the dark. He has not wanted men to know about him. Assuming his existence, then it would follow that he would have perfect ability to give a complete and universal explanation of himself, so that all men could see and know without further uncertainty. A real God could exhibit himself clearly to all men and have all men following his will to the last letter without a doubt or a slip.

But when we examine even cursorily the many contradictory revelations of God, the many theories and arguments, the many and diverse principles of piety, we perceive that all this talk about God has been merely the natural floundering of human ignorance.

There has been no reality in the God idea which men could discover and agree upon. The spectacle has been exactly what we should expect when men deal with theories of something which does not exist.

Hidden Gods – no Gods – all we see is man’s poor guesswork.

Meanwhile, Dear, if you ever need to defend yourself against an onslaught of verbiage from religious fools, you may want to try the following: just keep asking them “Why?” That is, keep after such fools until they explain to you the purpose of their game (although they, of course, won’t admit that theirs is a game; theirs, they’ll claim, is the “serious business” of “life-after-death”, or some similar and totally nonsensical concept dealing with their

“immortal souls”). For the “why” is the Achilles’ heel of all religions –their fatal flaw that will eventually lead to their downfall (at least in the minds of people who have minds that work). Thus, Dear,

- If you care to have anyone explain to you how the universe began, be sure to demand that all words be adequately defined, e.g., don’t let someone use an undefined word such as “God”
- If you want to learn something about nature, then ignore all communications that include any silliness about anything “supernatural”
- Remember: the concept of “miracles” (in the sense that religionists use the term, meaning “something caused by supernatural powers”) is oxymoronic: if something seems to have been caused by “forces outside the realm of human understanding”, then it isn’t evidence for the existence of ghost, goblins, and other “supernatural” entities; it’s evidence that the “realm of human understanding” needs expansion
- If someone advances a hypothesis that summarizes zero data, (e.g., the occurrence of some “miracle”, the existence of anything “supernatural”, miraculous communications of some “holy book” from some “supernatural” agent), then ask the person what he’s been smoking
- If someone advances a hypothesis and you have data to show that his hypothesis is wrong (e.g., that “nothing can be created from nothing”, that the Jews are God’s “chosen people”, that the Jews are inferior and that the Germans are superior, that black-skinned people carry “the mark of Cain”, or similar garbage), then in a manner that you consider appropriate, convey the idea that you invite him to blow it out his ear
- If someone advances a hypothesis that provides no testable predictions, then with suitable tact, ask him what testable predictions his hypothesis provides
- If someone advances an hypothesis that provides predictions that can be tested only by dead people, tell him that you’re looking forward to the results of his tests
- If someone tells you that good people believe his hypothesis and bad people don’t, tell him that he’s got it “back assward”

- If someone tells you that if you don't "believe" his hypothesis then you're headed for hell, advise him of your grandfather's modification of the definition of hell given in the movie *Platoon*: Hell is a place where reason and evidence don't stand a chance – and then tell him that it would appear he's already there
- If someone tells you that if you agree to "believe" his hypothesis, then after you die, you'll go to heaven, tell him that you were already there and that it's boring as hell
- Unless you have made an appointment to see a lawyer or a politician, or have had an encounter with a police officer or a judge of our legal system, avoid people who are willing (for a price) to tell you what the law is
- Unless you have made an appointment to see a doctor whose credentials are above suspicion, avoid people who are willing (for a price) to cure your illness
- Unless you have made an appointment to see a psychiatrist whose credentials are impeccable, avoid people who are willing (for a price) to tell you how to live your life
- If someone tells you that some "supernatural" entity (an angel, a god, or whatever) "miraculously" communicated some enlightenment either to the person speaking or to someone else, then with suitable tact, provide the person with the name of a competent psychiatrist
- If someone offers either to give you a copy of some "holy book" or to read it to you, then in a suitable manner, tell him that your newspaper already provides you with enough of both comics and horror stories.

And yes, Dear, I realize that what I've been suggesting for you to do (i.e., the suggestions in this and previous chapter) is nontrivial "stuff": to question your beliefs and faiths, to question how much trust and confidence you should place in your parents, to question if their scientific method deserves your confidence, to develop trust in yourself, to formulate your own set of values. But that, Dear, is what "growing up" is "all about."

Let me again quote M.M. Mangasarian's 1909 book *The Truth About Jesus: Is He A Myth?* – even though I'm a little dissatisfied that he's not more careful with the words 'believe' and 'truth' (but then, he wrote this almost 100 years ago).

“Tell us what you believe” is one of the requests frequently addressed to me. I never deliver a lecture in which I do not, either directly or indirectly, give full and free expression to my faith in everything that is worthy of faith. If I do not believe in dogma, it is because I believe in freedom. If I do not believe in one inspired book, it is because I believe that all truth and only truth is inspired. If I do not ask the gods to help us, it is because I believe in human help, so much more real than supernatural help. If I do not believe in standing still, it is because I believe in progress. If I am not attracted by the vision of a distant heaven, it is because I believe in human happiness, now and here. If I do not say ‘Lord, Lord!’ to Jesus, it is because I bow my head to a greater Power than Jesus, to a more efficient Savior than he has ever been – Science!

Elsewhere in this book, he explains himself more completely:

There is in man a faculty for fiction. Before history was born, there was myth; before men could think, they dreamed. It was with the human race in its infancy as it is with the child. The child's imagination is more active than its reason. It is easier for it to fancy even than to see. It thinks less than it guesses. This wild flight of fancy is checked only by experience. It is reflection which introduces a bit into the mouth of imagination, curbing its pace and subduing its restless spirit. It is, then, as we grow older, and, if I may use the word, riper, that we learn to distinguish between fact and fiction, between history and myth.

In childhood we need play-things, and the more fantastic and bizarre they are, the better we are pleased with them. We dream, for instance, of castles in the air – gorgeous and clothed with the azure hue of the skies. We fill the space about and over us with spirits, fairies, gods, and other invisible and airy beings. We covet the rainbow. We reach out for the moon. Our feet do not really begin to touch the firm ground until we have reached the years of discretion.

I know there are those who wish they could always remain children – living in dreamland. But even if this were desirable, it is not possible. Evolution is our destiny; of what use is it, then, to take up arms against destiny?

Let it be borne in mind that all the religions of the world were born in the childhood of the race. Science was not born until man had matured. There is in this thought a world of meaning.

*Children make religions.
Grown up people create science.*

*The cradle is the womb of all the fairies and faiths of mankind.
The school is the birthplace of science.”*

I'll be repeating Mangasarian's summary statement many times in subsequent chapters: ***Religion is the science of children; science is the religion of adults.***⁹

Meanwhile, though, your old grandfather (being very old) is permitted to behave as a child, again, indulging himself in imaginations. He imagines that the ideas that he's introduced in these I-chapters stimulate the interests of certain grandchildren in finding more complete explanations in the remainder of this book. Thereby, he imagines that his grandchildren develop great skill in both imagining what could be and learning what is. He imagines that, eventually, they learn not only that it's extremely unlikely that there ever was or ever will be such things as gods – that gods are just figments of primitive imaginations – but also that one of the most significant things that exist in the reality external to their minds is a tremendous amount of ignorance. He imagines, even, that this book will not only help remove some of that ignorance but also help convince not only his own grandchildren but also many children throughout the world that the only way *to learn what is* is via the scientific method. But then, he's just your silly old grandfather, who, if he's not sleeping, seems to do an unnatural amount of dreaming, imagining all sorts of silly things

“So then,” asks a seemingly innocent grandchild, waking from an apparent snooze and wondering if her grandfather has gone totally around the bend, “do gods exist?” Well, Dear, *ideas* of gods certainly exist, but because of the total lack of data to suggest otherwise, I conclude that's all they are: just ideas. If you ever uncover any data that suggest otherwise, please let me know. Meanwhile, whereas I've found absolutely zero evidence to support the idea that any god is anything but just an idea, I conclude that all gods are nothing but storybook characters. Therefore, believing in storybook gods is like believing in *Santa Claus, Superman, or Wonder Woman* – and I for one, prefer to believe in you.

But, Dear, so long as you're awake (☺), let me mention one other point, dealing with the “excursion”, **Ix**, ahead. In this book, I'll be offering you

⁹ Dear: I've taken the liberty to transform Mangasarian's statement into more-modern English. His statement is: “Religion is the science of the child. Science is the religion of the matured man.”

four “excursions”, all labeled with the letter x: **Ix**, **Qx**, **Yx** and **Zx**. In “paper books” these “excursions” would probably be offered as appendices, but in part because of the ease with which these “appendices” can be tucked electronically into a rather unobtrusive “files”, I call them “excursions”. And the point that I wanted to make is in response to an expected question from an impatient grandchild: “Well, do I gotta go on these excursions?” No, Dear, you don’t, but if you have some “remaining doubts”, then maybe it would help if you did. Let me try to explain what I mean in the case of the “excursion” that follows, i.e., **Ix**.

Thus, Dear, if you think that I haven’t adequately made the case that “Belief in god is bad science...”, then maybe you would like to pursue another way to evaluate any idea, namely, to try to uncover its origin. For example, if you heard that the world will end tomorrow, then wouldn’t you at least wonder about the origin of such an idea? Wouldn’t you want to know if such an idea came, for example, from the President of the American Astronomical Association or from a street-corner schizophrenic? Similarly, you might want to try to learn about the origin of the god idea and about all the ideas alleged to be from God and allegedly recorded in the various “holy books” of our culture.

More than 100 years ago, the philosopher Friedrich Nietzsche well summarized the value of examining the origin of the god idea with the following (from *Daybreak*, as translated by R.J. Hollingdale):

In former times, one sought to prove that there is no God – today one indicates how the belief that there is a God arose and how this belief acquired its weight and importance: a counter-proof that there is no God thereby becomes superfluous. When in former times one had refuted the “proofs of the existence of God” put forward, there always remained the doubt whether better proofs might not be adduced than those just refuted: in those days atheists did not know how to make a clean sweep.

Immediately I should add, however, that in **Ix**, alone, I can’t show you the origin of all ideas about gods. To do that would be an astoundingly difficult task. From **Ix**, nonetheless, I expect that you’ll see at least something about the origins of ideas of gods and souls and about the origins of many of the myths in the first part of the Old Testament. In addition, I’ll try to give you at least a glimpse of the fact that many of the stories in the New Testament were originally “written in the stars”, i.e., they’re “astrological tales”. Later, in the excursions **Qx** and **Yx**, I’ll show you some similar details about the

“holy books” of Islam and Mormonism, from which I trust you’ll see that all of these “holy books” are hoaxes.

But if your reaction is “Thanks but no thanks”, then, Dear, would you at least do one thing for me – and for yourself?! Please search on the internet for *The Epic of Gilgamesh*, find a few good translations, and read all of at least one translation. As you’ll find on the internet, this *Epic* is at least 4,000 years old (far older than any story in the Bible), and in the *Epic*, you’ll find the story that the authors of the Bible “borrowed” (or better, “plagiarized”) to create their story about Noah and the flood. And thus, not only will you see the origin of the myth about Noah but also (if you’ll read the *Epic of Gilgamesh* carefully) you’ll see how badly the authors of the Bible mangled the message in the original myth. And if you want me to explain what I mean, then may I invite you to take the excursion **Ix**?!

And if you complete that “homework assignment”, but still don’t plan to take the excursion, then still I’ll offer you a reward. But to get it, you’ll first need to read the two (short!) books by Homer, entitled the *Iliad* and the *Odyssey*, which are available on the internet.¹⁰ And the reward? Hah! First read Homer’s two books; then you’ll get it!

But if you resist both temptations, then would you at least consider the following thoughts of others? I’ve copied these quotations from various collections on the internet.

“Theory: when you have ideas. Ideology: when ideas have you.” [Anonymous]

“If you resist reading what you disagree with, how will you ever acquire deeper insights into what you believe? The things most worth reading are precisely those that challenge our convictions.” [Author unknown]

“It is always easier to believe than to deny. Our minds are naturally affirmative.” [John Burroughs (1837–1921)]

“To doubt everything or to believe everything are two equally convenient solutions; both dispense with the necessity of reflection.” [Jules-Henri Poincare (1854–1912)]

“We all live in the protection of certain cowardices which we call our principles.” [Mark Twain (1835–1910)]

¹⁰ For example, they’re at www.classics.mit.edu.

“A very popular error: having the courage of one’s convictions; rather it is a matter of having the courage for an attack on one’s convictions... Convictions are more dangerous enemies of truth than lies.” [Friedrich Nietzsche (1844–1900)]

“At eighteen our convictions are hills from which we look; at forty-five they are caves in which we hide.” [F. Scott Fitzgerald (1896–1940)]

“To believe is very dull. To doubt is intensely engrossing. To be on the alert is to live, to be lulled into security is to die... A thing is not necessarily true because a man dies for it.” [Oscar Wilde (1854–1900)]

“Martyrdom has always been a proof of the intensity, never of the correctness of a belief.” [Arthur Schnitzler (1882–1931)]

“Man is ready to die for an idea, provided that idea is not quite clear to him.” [Paul Eldridge (1888–1982)]

“Men love their ideas more than their lives. And the more preposterous the idea, the more eager they are to die for it. And to kill for it.” [Edward Abbey (1927–1989)]

“Conceptions without experience are void; experience without conceptions is blind.” [Albert Einstein (1879–1955)]

“The final delusion is the belief that one has lost all delusions.” [Maurice Chapelain (b.1906)]

And as this chapter’s final attempt to convince you to examine your beliefs, let me again quote Mangasarian’s book *The Truth About Jesus: Is He A Myth?*

I shall speak in a straightforward way, and shall say today what perhaps I should say tomorrow, or ten years from now – but shall say it today, because I cannot keep it back, because I have nothing better to say than the truth, or what I hold to be the truth. But why seek truths that are not pleasant? We cannot help it. No man can suppress the truth.

Truth finds a crack or crevice to crop out of; it bobs up to the surface and all the volume and weight of waters cannot keep it down. Truth prevails! Life, death, truth – behold, these three no power can keep back.

And since we are doomed to know the truth, let us cultivate a love for it. It is of no avail to cry over lost illusions, to long for vanished dreams, or to call to the departing gods to come back. It may be pleasant to play with toys and dolls all our life, but evidently we are not meant to remain children always. The time comes when we must put away childish things and obey the summons of truth, stern and high. A people who fear the truth can never be a free people. If what I will say is the truth, do

you know of any good reason why I should not say it? And if for prudential reasons I should sometimes hold back the truth, how would you know when I am telling what I believe to be the truth, and when I am holding it back for reasons of policy? The truth, however unwelcome, is not injurious; it is error which raises false hopes, which destroys, degrades and pollutes, and which, sooner or later, must be abandoned.

And now, Dear, although you might think (and hope!) that (finally!) I've finished my response to a certain four-year-old's questions about why I don't believe in God, actually, I've barely begun! Sorry about that, Dear! In these **I**-chapters, I've tried to show you at least an outline why I conclude that "belief in god is bad science"; in the next set of chapters (in **J** through **Q**), I'll try to show you why I conclude that "belief in god is even worse policy."

In an earlier chapter, I already suggested that it's the immoralities of all organized religions that are the prime reason why I reject "the god idea". That is, Dear, I could find all ideas about gods just rather silly, even humorous – save for the harm they have caused (and continue to cause) humanity. But I chose to show you, first, why I consider "the god idea" to be bad science, because I thought I could demonstrate it fairly objectively. In contrast, as you'll see, when I start to show you the harm that "the god idea" has done (and continues to do), then... Well, you'll see when you get to it, assuming you do...