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Effects of Trends in Science and Culture Talk to Teachers August, 2003
Beginning of School Year (Guiding children in Christian values)

In the history of philosophy there have been many approaches to the questions about ultimate reality. Is what we see and experience necessary or contingent? Some say one, some say the other. The Bible teaches that our world is contingent. It could be otherwise. Well, then, how come it is? And why is it as it is? So then this question leads to the study of secondary causes, or how come things are the way they are? How does this actually come about this way? Also the Bible presents one single God [monotheism] who rules the universe through his inherent wisdom and order so that it is lawful and not capricious. So the Bible sets up the framework that the **human intellect exploited** in the quest for understanding the order we find in the universe. Without it, we might not have science at all. Many Greek and Arab philosophers, by the way, believed that the world as we have it is the product of necessity. But if it's really a product of necessity, why would you bother studying it? Certainly not to change anything or improve anything! It has to be the way it is, and you can't change it. So **technology is actually only possible because of the contingencies that live within the creation.**

Now **Patrick Glynn** comes along, a very fascinating person. He was **an atheist**, brought up by nuns actually, taught in a Catholic school, and when the nuns taught him about Darwin's theory of evolution he said, "Sister, either that's wrong and the Bible is right or the Bible is wrong and that's right." And the sister looked at him and didn't comprehend why. He said, well, he understood as a kid that they are incompatible and he became an atheist. But then his life fell apart; his marriage fell apart, and he fell in love with another woman, who was a devout Catholic, and he realized he could not live with

her and her devotion to God because it was so deep and also be an atheist. Furthermore, she meant so much to him; she completely renewed his life, and it was partly her faith that renewed his life even before he had faith. And so he said I can't live in parts; I have to be whole. So **he went back over all of the evidence**, so to speak, and that's what this is called— *God: the Evidence, the Reconciliation of Faith and Reason in a Postsecular World*.* “Postsecular” means a world ruled by relativism, basically, and subjectivism. And that's what this book is about. It's a fascinating book; I really recommend it to everybody—God: the Evidence—\$15.00 paperback at Borders.

Glynn goes through three areas. He hits **several main arteries of atheism. The idea of the random universe—he said it's not random.** The idea of the power of faith, which you probably heard of this, **the power of faith to cure people.** Studies have been done, and it's remarkable the statistical differences between people who have faith and who don't have faith, people who pray and who don't pray, even people who are prayed for by somebody else even if they don't know it because they have had groups where no one even knew who was being prayed for and who wasn't, and the whole group that was being prayed for had remarkable recoveries and the other didn't. Now I thought that was kind of nasty to leave someone out of—but they were people who didn't believe, so they said they would be willing to be part of the study, so they didn't lose anything, but they didn't gain anything. And that's the way it is with life. We don't lose anything; we don't gain anything, see. So, of course, they may lose eventually life itself, but that's another matter. So he goes into these different areas. The third area is **out of body experiences;** he details them.

But I wanted to read to you just this little part, if you don't mind. **These are some areas where we can prove the universe is not the result of chance.** For example, "Gravity is roughly 10^{39} times weaker than electromagnetism." That's the power that keeps an electron with a proton. You understand? Well, here you have a proton and an electron and that makes up a hydrogen atom, for example. The electron is in orbit around the proton and it's held together there by electromagnetism. The electron is negative, the proton is positive. This leads to the joke about two hydrogen atoms. Now there are these two hydrogen atoms that ran into each other and the one hydrogen atom said to the other, "Well, how are you?" and he said, "Well, I'm not so good; I lost my electron." And the other one said, "Are you sure?" And the proton said, "Yes, I'm positive."

Electromagnetism is the force that keeps electrons attached to protons. So gravity is this much weaker. If gravity had been 10^{33} —you know what that means, 33 zeros—if it had only been that different—it's not very much difference, a difference of 06—"weaker than electromagnetism, 'stars would be a billion times less massive and would burn a million times faster,'" which means no planets would ever form.

Number two: "The nuclear weak force," which has to do with beta decay—I don't want to go into that—but anyway, take my word for it. It's 10^{28} stronger than gravity. "Had the weak force been slightly weaker, all the hydrogen in the universe would have turned into helium;" therefore, there would be no water.

Number three: the nuclear force is the force that keeps two protons together, even though they are both positive, in the same atom—it's called the "strong force." If the strong force had been even 2 percent stronger, it "would have prevented the formation of protons yielding a universe without atoms." If it's decreased by 5 percent, it "would have

given us a universe without stars,” therefore no sun and no planets. “If the difference in mass between a proton and a neutron were not exactly as it is”—which is approximately twice the mass of an electron—“then all neutrons would become protons or vice versa. Say good-bye to chemistry as we know it.” Furthermore if protons decayed into neutrons instead of the other way around, then the universe instead of being full of hydrogen would be full of neutrons, which would be nothing—neutral.

“The very nature of water—so vital to life—is something of a mystery. Unique among the molecules, water is lighter in its solid than liquid form: Ice floats. If it did not, the oceans would freeze from the bottom up” and now we would be full of ice—the whole planet would be full of ice.

“The synthesis of carbon—the vital core of all organic molecules”—everything living has carbon in it, carbon atoms—“on a significant scale involves what scientists view as an ‘astonishing’ coincidence in the ratio of the strong force to electromagnetism.” Strong force, don’t forget, which keeps protons together; electromagnetism keeps electrons with the protons, all right, their proportion between them. “This ratio makes it possible for carbon-12 to reach an excited state of exactly 7.65 MeV”—it doesn’t matter that you keep this in mind, just that it is something specific—“at a temperature typical of the center of a star, which creates a resonance involving helium-4, beryllium-8, and carbon-12”—remind you kids about this—“allowing the necessary binding to take place during a window of opportunity.” This is the point: the window of opportunity is 10^{-17} of a second. That’s the opportunity this binding can take place, and yet if it didn’t take place, there would be no organic matter; there would be no life. **This is not a random universe—that’s the point.**

This is the conclusion that Glynn reached: well, **people that want to be atheists just want to be atheists. They are not driven to it by any scientific data, quite the opposite. Scientific data just opens up marvels and wonders.** And **Albert Einstein said that a person who no longer wonders is as good as dead**—that’s what he said—a person who no longer wonders is as good as dead. He said they are “snuffed out candles”—that’s one of his expressions.

And this idea of not wondering is part of the whole problem because **atheists say there is no reason to wonder about this; it just happened because there are, as Carl Sagan used to say, “billions and billions of universes.”** He used to say that; did you ever hear him? “Billions and billions of universes”—well, that’s part of the idea. It isn’t just one universe. There are billions of them and we could never know, of course, anything about any of them. We will never see them. It’s interesting. They don’t believe in mind and they don’t believe in spirit, because they can’t prove it, but they believe there are billions and billions of universes we will never know or touch or see or have any information about, but they believe it. And because there are so many then they say, well, of all the billions there are, this one just happens to be one of them and it happens to be the way it is.

And now some scientists are announcing **the foolishness that “anything that can happen, will.”** That’s actually in an article in *Scientific American* very recently by Mr. Tegmark, **Max Tegmark**. It’s *Scientific American*, May, 2003, and it’s on this very topic. And he says if anything can happen, it will. But we don’t have to believe in God, you see. Then, of course, there is nothing contingent, is there? **Everything possible will have to happen eventually, so that we shouldn’t wonder about anything.** It’s just, well, it

could, so it did—see, that’s the logic. So Glynn decided it was for the birds, so we are very happy with that. That’s all I am going to quote from him.

Now for your information there is another wonderful book if you ever want to get really involved. It goes into great detail and to all the coincidences—the whole book of **all the coincidences that really show that there has got to be design in the universe.** Now that’s not the same thing as talking about faith, though, because—this is by John Leslie from England, **John Leslie, called *Universes*.** And he deals with all these anti-God theories and arguments, but it’s not the same thing as faith. He is not talking about faith; he is talking about reason, using reason to figure out that something is going on.

***The Fifth Miracle* by Paul Davies** is also a very interesting book. He is more talking about biology, believe it or not, even though he is a physicist. He has now moved to Arizona. He was in England, he was at Cambridge, I think. As a physicist he wrote *God and the New Physics* and a few other books like that—*Superforce*. He is not a believer really, but **he is very open to the idea that there must be some source of information to make things work.** He said why do things work the way they do; something has to make them work. He said that’s what the **atheists do not explain**, and that’s why science is at almost at a dead-end, he says. I think that’s his word. So it’s a very interesting idea that he deals with. What he thinks science has to discover is that **the universe is actually friendly.**

Actually **Darwin’s idea is that the universe is hostile.** **Stephen Jay Gould**, who has departed from our planet now, but he used to be at Harvard, and he was a great Darwinist. Quite a few of the Darwinists are very vocal; they are often argumentative people; he is one of them. Daniel Dennett is another one. But anyway, he was arguing that **life was an**

accident; it just happened, but it's such a rare occurrence it will never happen again; therefore, there cannot be any life on any other planet; the mutant is too improbable. But see, if you just push it a little bit further, you just realize, well, it is absolutely improbable. In fact, there are those that tried using super computers to compute how many, what probability there would be feeding in all these coincidences. What is the probability they would all come together? And the computer said zero; there is no probability. Well, see, Gould could agree with that, but it did happen and therefore it did and that's it, but it won't ever happen again. That's a very interesting point of view. How they arrive at it—by choosing to arrive at it; I don't really think it's a reasonable—something you arrive at reasonably.

Now recently another book has come out—very interesting book—*Why God Won't Go Away*. This is by **Andrew Newberg, M.D. and Eugene D'Aquili, M.D.** What they are talking about is that the brain is actually wired for transcendence. One of the things Glynn brought up in his book, he says it is funny that we can prove that religion is good for people, that it helps people heal, it helps people overcome additions and so on, it is funny if there is no God that we evolved to believe in something that doesn't exist, and that that helps us—that's funny, he says. Well, they go on to say, well, **the brain is actually hardwired for transcendence**, and they go into ritual, how ritual helps the brain and also the whole idea of mysticism. So that's a very interesting study as well.

So now **when people want to get away from all these things, they say, well, it's not possible.** They say it's not scientifically possible—they mean it's not materially possible. I mentioned that before. So we have to keep that in mind when we hear people talk about what is scientifically feasible or possible—what are they talking about? What we are

talking about is actually **the coming to the end of a paradigm**. You know what a paradigm is? It's **a model by which you deal with reality**. The paradigm that has been developed since the Big Bang—and incidentally the **Big Bang** was originally a thought of a Belgian priest who was studying in the United States before World War I. And he developed this idea based actually on the creation, but he was using the knowledge of the time but trying to combine it with creation, the theory of creation. And he developed this idea, although he didn't call it the Big Bang.

Well, what happened was then came **Einstein's Theory of Relativity** and when people read it they said, "Well, gee, Albert, according to what you are saying, we should be collapsing; **gravity should be crushing us**." He said, "Really?" They said, "Look what you said." He looked. "Oh, big mistake," he said. So he said, "Well, I'll fix it." So he put in—this is a Greek "L," lambda—**he put in what he called lambda, which is a force to keep the gravity from crushing us**. So he added it to his formula. So that's a very good thing to do. Whenever something doesn't work, like if your checkbook doesn't balance, well, just write in something that makes it balance.

Newton did the same thing. Newton did that with gravity. When he was talking about the attraction of the moon and the sun and he had this big long hairy formula, and they said, "Gee, that's awfully complicated." And he said, "Okay"; he just crossed out most of it and left the rest, and it works more or less. So Einstein said, "Oh, just a mistake," so he added that—he said, "Biggest mistake I ever made." It was the biggest mistake he ever made because it turned out he didn't need it. In fact, what happened was in the late 30's, maybe even in the late 20's, this **man out in California** in an observatory was taking night pictures of the sky. What he realized is that there is a red shift, meaning that the

light wasn't true. It was shifting to the red, which means it's going away. So **he realized the galaxies were actually moving away from us, and that was then the discovery of the expanding universe. Well, the expanding universe then fit this priest's idea of the Big Bang**, but it still wasn't called that.

Then an atheist who hated the idea ridiculed it. When he called it the "Big Bang," he meant it was a big farce. He thought it was a big joke. Big Bang—he was ridiculing the concept. Of course, it didn't help that Pius XII thought it was a great idea, and he said so. Of course, once the pope liked it, then no one liked it. But the facts fit. So as time went on it took and it's called **the Big Bang, meaning that everything, all matter, emerges into reality at one single point and expands ever since**. Now there are a lot of problems with it in terms of figuring out how it works, but that's the basic theory. And **putting all this together with everything we know about physics is called the "Standard Model."** It has been worked on by all the great physicists of the twentieth century and there were a lot of them. Albert Einstein was one, of course. Niels Bohr was another, and quite a few of them.

But here is what's happening in our particular era. First scientists discovered that **the universe was expanding, which lent credence to the Big Bang**, but did not actually prove it. **It was proved by the discovery of background radiation**, which you see when you turn on the television if you don't have cable in a sort of snow. That's background radiation. When that was discovered in the early 60's, then they knew the Big Bang was correct, because that's left over from the bang. And that's all part of the Standard Model. **What the Standard Model tried to do was show how everything works.** What is a

proton? What is an electron? And all that sort of thing, and all the other particles of which there are lots—lots of particles.

But one of the big principles was $E=mc^2$. Remember that? Energy equals mass times the velocity of light squared. **Well, maybe not**, because the problem with energy is they have **discovered this huge new source of energy** because now the galaxies are not only expanding—they have known that since the 20's or 30's—but **they are expanding faster now than they did a million years ago**, and faster a million years ago than a million years before that. Now how do you account for this? Something is pushing them, or another way of putting it is **space is being created in between them**, another way of thinking about it. **How did that happen? There is no explanation at all, and so they call this “dark energy.”** “Dark” means they have no clue what it is—dark energy. Well, guess how much dark energy there is in the universe according to *Scientific American* last month—what percentage? **Of all the energy in the universe seventy-one percent is unexplained—seventy-one percent is dark energy.**

But that's not all. There is something else they have known about for a long time called “dark matter.” **Dark matter is the matter that must exist because if it didn't exist, the galaxies should fly apart.** Why? Galaxies are kept in place by gravity. Well, where is the mass that allows for this kind of gravity? If you just look at the light matter, in other words the stars, even the dwarf stars, the dead stars, if you just look at that stuff and the planets, if there are any, it is not enough mass for the gravity to keep it together. Something is keeping it together. The answer is dark matter. What is it? No one has a clue—lots of theories and no clues. How much dark matter is in the whole universe, what percentage of the energy? Twenty-six percent. Well, now what does that leave? Three

percent—that's all they know about. **The Standard Model only pertains to three percent of the energy of the universe.** So does it equal mc^2 ? Well, for three percent it does. What about for this percent? Who knows? If matter doesn't interact with light, which is why it is dark—"dark" doesn't only mean that they don't know what it is; it also means it doesn't interact with light. Well, if it doesn't interact with light, can we say that the velocity of light has anything to do with it? Your guess is as good as mine and is as good as anybody else's. What about this? This dark energy is purely gravitational energy. Does that have anything to do with light or mass? Nobody knows. So **the Standard Model needs some tweaking.** Somebody said at the beginning of the twenty-first century we know far less than we knew at the beginning of the twentieth.

Finally I want to talk about reductionism. **Reductionism means that science tries to explain things as simply as possible.** Well, that's good—right? You don't want an elaborate explanation if a simple one will do. Now in the past you had the old theories about how the planets all moved and it was very complicated. Copernicus came by and said that's too complicated; I have got a simpler explanation: the sun is the center of the solar system and look how it works? So that's reductionistic. That's very nice; it's good. **The problem is a reductionistic explanation has to explain all the evidence, and modern reductionisms don't. Quantum mechanics, for example, reveal a random, unknowable substratum on the subatomic level, yet there is order in the universe.** How could it? Well, one explanation is mind penetrates everything; **the mind of God penetrates everything.** I don't know another explanation; there could be one.

So, now what do we need for ourselves? Well, we have to remember that human nature doesn't change, but cultures do change. And in the twentieth century the Western

culture went through a tremendous change, and it's going to continue to go through many more changes because **the Standard Model of the scientific paradigm doesn't work so well anymore. The biblical belief is all truth is one.** The truth of physics cannot disagree with the truth of revelation. The truth of chemistry can't disagree with the truth of physics. Everything has to be together. So **we are really in a new era of looking for—actually picking up the pieces. Most people actually don't know that this is not working.** Most people think, oh, science knows. **They have this kind of faith in science.** Is it well placed? That's up to you to decide. But they don't realize that **its paradigm really has to be rethought almost from the bottom up. And people must come forward to do this.**

Meanwhile we have to be—"we" meaning Christian people—have to be part of the building. And part of that is, in my view, speaking out. I think people are too silent. **Christians in this country are too silent. They have been brought up to be tolerant to an extreme,** tolerant in the sense, yes, you don't throw stones, but it should not be tolerant to this point you don't say anything. **You need to speak up about what is right and wrong.** Ultimately, it seems to me, that the greatest threat is not to the faith; God will keep the Church going; we have God's guarantee.

But there is, I think, a true danger to our democracy. **Our democracy cannot operate in a world that is relativistic,** where there is no higher authority than human beings: what human beings want and think. If you read the **Founding Fathers,** all of them say that. They **depend on the very existence of God and the law in the mind of God,** or there cannot be any difference between tyranny and justice or justice and injustice.

What's the difference? It's all a matter of opinion. And that's really the direction we are going in. That's dangerous for our democracy.

So I think we have to teach the Declaration of Independence, the principles in there. When Thomas Jefferson said, “life, liberty, the pursuit of happiness,” what is life? I think we have to bring that up with our children. What is life? What do you think life is? We have to teach it from a holistic point of view, a Christian point of view. Liberty—what is really liberty? Is it just doing what you want? That's what most people think it means. It didn't mean that to Thomas Jefferson. It did not mean just doing what you want. Patrick Henry said, “Give me liberty or give me death.” Liberty is something that sometimes requires you to die, so it's not doing what you want. This is however being lost in our culture today because **it's based on something transcendent, and that transcendence is being denied.**

The pursuit of happiness—what is happiness? I think that's what we should bring up constantly with children. What is happiness? Thomas Jefferson meant the pursuit of happiness is the pursuit of virtue. That's what he writes when he explains what he means—the pursuit of virtue. And that's a very Christian idea. **We become happy because we pursue virtue.** We have goals which are not simply personal and subjective, but they are objective goals; they are based on something that is good, that goes beyond me, what I want, but what is good for others; it's **based on an understanding of the common good**—pursuing that is how we become happy.

People who pursue self-will and self-love are not really happy people, and you can see it in the great unhappiness around us. Then people **try to drown themselves in two things: leisure and consumerism.** One article in the *Economist* recently said leisure is

one of the things people consume. There is a big argument: Are Americans smarter because they consume more things or are the Europeans smarter because they consume more time? Well, I thought that was a stupid question. Neither will lead to happiness. Endless vacation—that's a lot of people's idea. Oh, I can't wait until I retire. Why? Because I hate my work. Why do you hate your work? Well, because it's pointless. Well, why is it pointless? Well, I don't know. What's it for? Well, I don't know. Well, no wonder you hate it! **Pursuit of happiness comes from the pursuit of virtue. But people work just to make money and they want more money than they need to live on because they want to buy things and they think that's going to make them happy. Our children are like this too.** I think you have to constantly bring it to their attention, how foolish they are thinking what they do, knowing that their parents may think that way too. Jesus says, "Be as wise as serpents and as innocent as doves." So be serpentine in the way you get these ideas into their little heads. **Find ways to let them see things.** Consumerism and leisure—so I think people have to look at that.

And I think we have to **teach respect for our form of government**, which means participating. I know kids can't vote and all that. I know most political issues are over their head. But **the ideas of our government can be presented to them.** Again, the **Declaration of Independence—if you just go over that every year, what do those words mean? I think it would have a very powerful effect.** And ultimately I think we have to keep in mind that **we ourselves are not going to make a great change. All we can do is help. We can just do a little bit.** But if everyone does a little bit, something will be done. And that's all you can do—your own little bit.

*Glynn, Patrick. *God, the Evidence, the Reconciliation of Faith and Reason in a Postsecular World*. Rocklin, Ca: Prima Publishing. 1997 [A fascinating *tour de force* of one man's conversion to the Catholic faith after being a convinced atheist]