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Taner Edis and *The Ghost in the Universe*

Truman Professor Discusses the Search for God in a Strange and Random World

By Daniel R. Barnett

The North Texas Skeptics were given a special treat for the November meeting – a visit from Taner Edis, assistant professor of physics at Truman State University and author of *The Ghost in the Universe: God in Light of Modern Science* (published by Prometheus Books). We had a great turnout for this lecture, and those who showed up gave our guest an enthusiastic reception.

For those who are unaware, *The Ghost in the Universe* (Edis' first book) deals with humanity's search for any sort of spiritual reality beyond nature. Is the question of God a matter of faith, or is it a purely philosophical question? What does science contribute to the debate? For Edis, researching these questions proved to be difficult but also very rewarding. He was aided during the manuscript process by many reviewers, among them our own Virginia Barnett. The official position of the North Texas Skeptics is that there is a finite possibil-

ity either way for or against the existence of God, but Edis' lecture gave us a heaping feast for thought.

Edis began by discussing some of the traditional proofs of God's existence, such as the concept that the universe requires God as a First Cause or the idea that a complex order in nature indicates design by God. With events such as the rejection of the Aristotelian model of the universe and the advent of Darwin's theories of evolution, such proofs failed, but our world might still be best explained by a theory where God plays a central part. But what do our sciences have to say on the matter? Is God the ultimate ghost sighting – one of a cosmic scale, but still treatable like any other ghost claim?

Part of the debate, according to Edis, deals with how one views the world. Religion, far from being mere moral philosophy, claims that spiritual realities underlie nature; this describes a *top-down* model of the universe, where reality is shaped by conscience and purpose the same way that an artisan designs and crafts a Louis XIV chair. Naturalists, on the other hand, insist on a *bottom-up* model of the universe, where everything – including life and sentience

EVENTS CALENDAR

Year-End Party

Next week is the NTS party.

Saturday, 13 December 2003, at 2 p.m., Center for Community Cooperation, 2900 Live Oak Street in Dallas

Bring food and drink. There will be contests and prizes.

NTS Board Meeting and Elections

Saturday, 10 January 2004
2 p.m.,
2900 Live Oak Street, Dallas

We will hold our annual elections for members of the North Texas Skeptics Board of Directors in January. Full members can vote. Full members can run for the board.

We will elect the board members. The board members will meet immediately and appoint officers.

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 members receive the NTS newsletter and may attend
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 reduced cost. In addition, members will receive mailings
 on topics of current interest or social events.

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– is assembled out of the lifeless and nonsentient substrate of mere physics.

Parapsychology is one example of a field where researchers seek evidence of interaction between the material world and the spirit world. Edis observed that some liberal theologians are sympathetic to claims of psionic ability because they define boundaries for a scientific worldview, a point where the mind is liberated from the constraints of the purely physical brain. Thus, theologians can replace traditional magic with concepts such as “agent-causation” and reaffirm the existence of the supernatural.

But where is the evidence? Experiments with psi in laboratory settings produce results no better than chance, and some tests such as Samuel Soal’s psi experiments in the 1950s were found to have been altered or rigged. So parapsychology is not just an experimental failure, according to Edis, but it just doesn’t fit science in general – especially neuroscience. On the other hand, skeptics of parapsychology may be religious, and advocates for psi may not embrace more traditional conceptions of God. But, says Edis, if there is no non-material spirit that acts on the material world, what then of the top-down universe, let alone God?

Then there’s another discipline that, by its very nature, demands a top-down, hierarchical reality – intelligent design, or ID (Edis called it “creationism without Bible-thumping”). It has broad appeal among theologians and attempts to address the irreducibility of intelligence and creativity. Author John Haught, in his book *God After Darwin*, described God as “the ultimate source of the novel informational patterns available to evolution.” Thus, ID reinforces the top-down model by demonstrating that information comes from above to form biological patterns.

Intelligent design, however, isn’t practiced as a science (for example, there are no scientific ID publications). More importantly, though, the questions that ID raises about complexity have already been answered – and, as Edis pointed out, these answers depend on a surprisingly high level of randomness. For starters, *random* variation and selection and the lack of preset goals are critical for achieving genuine creative novelty. Edis is also convinced that Darwinian processes shape the development of intelligence; application of Darwinian mechanisms transformed artificial intelligence from canned, preprogrammed output into open-ended, evolutionary behavior.

So can evolution be reinterpreted as God’s method of creation? Edis called attaching a deity to evolution arbitrary at best, let alone evasive. But those who embrace a theistic cosmology point out arguments from modern physics, including the idea that physical constants are fine-tuned for intelligent life. Also, a supreme intelligence can be deduced from what are believed to be elegant symmetries of physical laws; even Albert Einstein confessed puzzlement over the orderliness and mathematical elegance that he observed in the universe, while the newer concept of string theory (and its rebirth as M-theory) describes a universe that is fundamentally symmetrical and elegant. Was the Big Bang really God’s little firecracker after all?

Maybe not. Edis explained that the Big Bang is credited with producing not just space, but also *time*. General relativity, which we have Einstein to thank for, therefore fixes the singularity that the Big Bang originated from as the *boundary* of four-dimensional space-time. “Asking about a time before the beginning of our spherical space-time,” Edis explains in *Ghost*, “is like asking what lies north of the North Pole. There is no such thing.” If there were no such boundary, the universe would simply be infinite, without beginning or end – or any apparent need for a creator. With a singularity as the boundary for 4D space-time, though, the state arising from such a singularity would be completely random with no physical laws to make sense of this pre-Big Bang reality. Can a legitimate argument for intelligent design and purposeful patterns be discerned from such a scenario without resorting to metaphysical smoke and mirrors?

At this point, everyone was riveted to their seats, and Edis hadn’t even jumped into quantum mechanics yet. When he did, however, it further showed how truly random our universe is. What we perceive as symmetrical laws of the universe are actually frameworks for accidents – like coin flipping. The intricacies of quantum mechanics result in symmetries being broken on a fairly regular basis. In fact, fundamental physics is full of randomness, right down to the very fabric of the universe itself. Even what we perceive as the most abject vacuum really isn’t thanks to quantum mechanics; space constantly produces short-lived particle-antiparticle pairs out of apparent nothingness (a phenomenon known as *zero-point energy* or the *Casimir effect*). None of these bizarre manifestations of quantum mechanics require consciousness. It’s plenty weird, but not magical or metaphysical.

But why all this talk of random events on a quantum scale? Edis pointed out that randomness is *fundamental* to our universe, a constant cosmic game of dice – Einstein’s famous assertion to the contrary notwithstanding. The most basic laws of physics merely determine what sort of dice are thrown to generate the history of All That Is. What we perceive as cause and effect emerges from a microscopic substrate where things just happen randomly due to another casting of quantum lots. Randomness may be fundamental, but this is no accident.

So how does one legitimately infer a God from a universe that is fundamentally random and completely arbitrary – one where uncountable numbers of virtual particles wink in and out of existence throughout the universe every *second* due to zero-point energy fluctuations? One where the laws of physics themselves merely describe symmetry breaking that freezes our low-energy physics in place? One where our very minds are products of an accidental and material world, forever relying on randomness to spur on creativity?

Regardless of the answer, Edis maintains that the sciences we develop are the best tools to bring to the debate over God, as religious “theories” have been massive failures. The bottom-up model of the universe makes more sense than the top-down model; where God fits into this random universe, if at all, will likely be difficult to discern.

Many thanks to Taner Edis for a truly challenging and thought-provoking presentation! We hope to see him again soon.



EDITORIAL

Texas chainsaw massacre

by John Blanton

It’s all over, and there’s not much to shout about. What can you say? The Discovery Institute came down to Texas, and they got their butts kicked.

Hoping to discredit Darwinism at the State Board of Education review of biology textbooks, the DI sent in some of their big guns. Unloaded, it turns out.

Michael Behe, Bruce Chapman, Jonathan Wells, and John West came from out of state. Walter Bradley and Raymond Bohlin didn’t have to drive quite so far.

Jonathan Wells is famous for his book *Icons of Evolution*, which we have previously reviewed.¹ Michael Behe has written *Darwin’s Black Box*, also reviewed.² Bruce Chapman is founder and president of the Discovery Institute, and John West is a senior fellow at the DI. Walter Bradley is a professor at Texas A&M University, where he headed the Department of Mechanical Engineering back when we first encountered him at a creation-evolution symposium at Southern Methodist University in 1992. Raymond Bohlin is the DI’s point man in the North Texas area.

Most or all of these fine gentlemen hold Ph.D. degrees. Particularly, Drs. Wells, Behe, and Bohlin have degrees in biology or biochemistry. For all of this, none of them brought along anything to convince the SBOE to reject the proposed biology textbooks.

Snippets from the testimony at the 10 September SBOE meeting in Austin illustrate the difficulties faced by the DI.³

Jonathan Wells' *icons* were a recurring topic. The so-called icons are facets of science, supporting evolution, that Wells claims are either wrong or over-stated. People doing legitimate research have pounced on Wells' icons to point up the low quality of work being done in the name of science by the DI. At the meeting a succession of witnesses took Wells' icons apart one by one and demonstrated that *Icons* is a fine bit of propaganda, not backed up by any original scientific research, but relies on the research of real scientists. The real research contradicts the points Wells attempted to make in his book.

For example, board member Terri Leo questioned Russell Glasser's testimony that *Icons* was not a peer-reviewed scientific work—asserting, instead, that it had “been peer-reviewed on the peppered moth story.” Glasser reminded her that Wells had actually used the peer-reviewed research of Michael Majerus, who subsequently responded to Wells, telling him that his use of quotations from the research was misleading. Specifically, Wells stated the moths never rested on tree trunks, when in fact Majerus' research contradicted that statement. Since this was a major point of Wells' argument, the observer is left wondering why Wells went down this blind alley in the first place.

It was much the same up and down the line. The DI's cadre of recreational scientists came up against the real thing and got shot down. It wasn't even a fair fight.

Finally, all of the proposed textbooks were adopted by a vote of 11 to 4 in the final vote on 7 November. They were placed on the “conforming” list—meaning that local school boards will be likely to approve their purchase. Additionally the National Center for Science Education reported:

Mavis Knight proposed that all books be adopted, and that a hard copy of a web-based document prepared by NCSE's Alan D. Gishlick, entitled “‘Icons of Evolution?’ Why Much Of What Jonathan Wells Writes About Evolution Is Wrong,” be placed in the permanent record of the meeting. This on-line document is a concise and readable but detailed critique of DI Senior Fellow Jonathan Wells' book *Icons of Evolution*, upon which the DI's analysis of the textbooks relies. Dr. Gishlick's essay is available on the NCSE web site: <http://www.ncseweb.org/icons>.

The DI missed a great opportunity to make a stand for good science in this instance. Instead, rather than bearing down on the factual gaffes that plague most or all commercially-produced texts, they concentrated on picking at peppered moths and finch's beaks, trying to wear down over two hundred years of scientific research to get at natural evolution, their real

target. Doing so, they spent most of their dwindling credibility showing us just how badly science can be done.

It's not as though DI came away with nothing, however. For all their effort they did pick up a minor life experience. They've had the benefit of our fine Texas hospitality, and they now know what a chainsaw looks like. □

References

- 1 See “Icons of evolution” in the October 2002 issue of The North Texas Skeptic, available on-line at <http://www.ntskeptics.org/2002/2002october/october2002.htm>.
- 2 See “Behe's black box” in the November 1999 issue of *The North Texas Skeptic*, available on-line at <http://www.ntskeptics.org/1999/1999november/november1999.htm>.
- 3 Transcripts of the testimony at the 10 September hearing are available on the Texas Education Agency Web site: <http://www.tea.state.tx.us/textbooks/adoptprocess/index.html>

The transcript file in PDF format is at <http://www.tea.state.tx.us/textbooks/adoptprocess/sept03transcript.pdf> and at <http://www.ntskeptics.org/2003/2003december/sept03transcript.pdf>.

Politics at the textbook hearings

Gasp! There's actually political wrangling going on at these textbook hearings. Mark Ramsey of the Texans for Better Science Education was the first speaker of the day. His Web site is at <http://www.strengthsandweaknesses.org/>

Mr. Ramsey: Madam Chairwoman and members of the Board.

My name is Mark Ramsey with Texans for Better Science Education. I am registered in the State of Texas as a professional engineer. As we start this historic meeting, this packed room demonstrates the controversy that continues over the de facto monopoly power a relative handful of individuals exert over the teaching of chemical and biologic evolution. With apologies to Winston Churchill, never have so many been so intimidated by so few.

As an honors graduate from Texas Tech, I once believed in evolution. I was surprised when a friend told me there were inconsistencies with the theory. I was indoctrinated — some would say brainwashed — to believe that evolution was as proven as is gravity.

Today, over two decades later, many of us now know better. As the years since the voyage of the HMS Beagle have passed, we are no closer to answering profound problems with the theory that even Darwin recognized. New problems with several theories relating to the origin of the genetic code and the very information contained in that code appear to be insurmountable.

You will hear today from many, although not as many, credentialed and world-recognized scientists, each discussing one or more profound scientific weaknesses of evolutionary theories. To be clear in the beginning, TBSE is not attempting to insert the Bible, creation science or even intelligent design into the textbooks. We are a very diverse group and we do not agree on some issues. TBSE submitted multiple reviews to you on most of the books. In those reviews, we have become unified, however, in asking that publishers be made to abide by existing Texas law passed by a bipartisan majority of this very Board and supported by a breathtaking 82 percent of Texans. Literally thousands of Texans agree with us enough to sign a simple online statement supporting the enforcement of current law.

We actually wish more evolutionary theory was being taught, not less. Strengths and weaknesses. At the end of this historic day, I urge you to take the bold step of simply recognizing the most enduring controversy of mankind, that of origins. And that profound and seemingly intractable scientific difficulties with the various theories of evolution, in some cases mutually exclusive theories of evolution, do indeed exist and should not be covered up or otherwise censored.

As a fifth generation Texan, I say we should lead in teaching both sides of the controversy and let the fittest survive. Please stop scientific censorship.

Thank you.

Chair Miller: Thank you.

Mr. Rios: Stephen Schafersman, followed by —

Dr. McLeroy: Question: I just want to know, did you do a — which review — how many books did you actually review yourself and send it to us?

Mr. Ramsey: I personally scanned every book that was submitted. I only really did a detailed review on four of those books. And I think I actually submitted two of those to the TEA. But the broader group, TBSE, covered, I think it was about eight or nine of — of at least the larger books, if you will.

Dr. McLeroy: So not only have you read the books, you've read them and read them in detail?

Mr. Ramsey: Absolutely. And not just this year's books, but prior year's books, as well, to compare with.

Dr. McLeroy: I just want to tell you, thank you very much for all that work. That's what I like to see in people that testify, that they've actually read the books and have given us concrete testimony. And that's what you — the written testimony that we received earlier in the week had your review. So thank you very much.

Mr. Ramsey: Thank you.

Ms. Leo: Madam Chair?

Chair Miller: Ms. Leo.

Ms. Leo: I just wanted to ask you:

I know that all of your written comments were turned into the Board, all the Board members got that through the mail. But when I looked over that, I

didn't see one of your reviews in the comments in the changes in the science that you were talking about in there that mentioned your personal belief, your religion, creationism, intelligent design, didn't even mention age of the earth issues as some have alleged. And I would just encourage — and I want to thank you as well for taking the time to write that. But I'd like to encourage the Board members to look at those written reviews. I think a lot of people will not be able to point to specifics, but they'll have a generalization. You have provided for the Board specifics. And I really do appreciate that.

And what does your petition say that you have on your sheet?

Mr. Ramsey: You know, I don't actually have a copy of it, sorry. So this was not a planned thing. The petition online essentially says that whoever signs the petition agrees that teaching both strengths and weaknesses, as required by TEKS 3A, should be followed. It says nothing of creation science, of intelligent design or anything of that sort. It's simply teaching both sides of the controversy, strengths and weaknesses.

Ms. Leo: And I know that's been up for three weeks, because I looked at it. How many people have signed that petition?

Mr. Ramsey: It's a little hard to say, because the server has been apparently swamped or something. But the last accurate count was over about 400. And they're actually escalating pretty rapidly here with all the publicity.

Ms. Leo: I thank you for doing that web-site. It's an awesome web-site. I encourage the Board members to go to it. The reviews will be on there.

Mr. Ramsey: Thank you very much.

Chair Miller: Thank you.

Mr. Montgomery: Madam Chair.

Mr. Ramsey, I appreciate the time that you've taken to review some of these books.

I'm looking at a book review that you made of *Biology: The Dynamics of Life* by Glencoe Science.

It's a quite extensive review and I appreciate any citizen taking the time to do that.

As you know, State Board members are not scientists. We must listen to both sides of the issue and we have so-called scientific experts on both sides of every case, as you might well know.

And so we must determine, you know, which is correct and so forth. And I think that — I can't speak for all of my colleagues, but we all certainly, I think, want the TEKS 3A to be adhered to, which includes both strengths and weaknesses.

But having said that, you have reviewed these books very extensively. What is your background in the biological sciences?

Mr. Ramsey: Background in the biological sciences?

Mr. Montgomery: Yes, sir.

Mr. Ramsey: Some college work. I'm not a Ph.D. biologist.

Mr. Montgomery: Your background is what field?

Mr. Ramsey: Mechanical engineering.

I spent about half my career in research and the other half as a consulting engineer in the oil and gas business.

Mr. Montgomery: Are you associated in any way in any other organization that might have an interest in this whole issue as far as evolution, creation or intelligent design? Do you belong or head any other organizations?

Mr. Ramsey: I don't quite understand your question.

Mr. Montgomery: Well, I mean, do you belong to any other active organization, such as an evolution group, a creationist group or an intelligent design?

Dr. McLeroy: Point of order. That has nothing to do with what we're — Dan, let's get on with this.

Mr. Montgomery: I'm asking the questions. You've had your —

Dr. McLeroy: This has nothing to do with these textbooks.

Mr. Montgomery: Well, I just — I don't know why anybody would not want to answer that question.

Mr. Ramsey: Are you —

Dr. McLeroy: We'll be here all night long.

Mr. Montgomery: I just asked you the question: Do you?

Mr. Ramsey: Do I what? I don't under the question.

Mr. Montgomery: Well, I'm going to have to repeat it again.

Mr. Ramsey: Do I have interest —

Mr. Montgomery: Do you belong to or —

Dr. McLeroy: Madam Chair.

Mr. Montgomery: — are you active in any organization —

Mr. McLeroy: Point of order.

Mr. Montgomery: — that might be historically associated with this issue, such as an evolutionist group, a creationist group or an intelligent design group? The three issues here.

Mr. Ramsey: What I am associated with is a group of scientists that looks at the science of this very issue.

Mr. Montgomery: So you don't belong to any creationist organization?

Mr. Ramsey: You'll have to define "creationist organization." That is not what — that is not the subject of this day's —

Mr. McLeroy: Madam Chair, point of order.

Mr. Montgomery: That's my question. And I don't care to be interrupted by a colleague.

Dr. McLeroy: Madam Chair.

Mr. Montgomery: I'm trying to find out the correct vote. And I am not a scientist. And I think that in order to look at these reviews and determine whether or not there are biases, whether or not someone has reviewed a book who's qualified to review them, that's what we have to look at. And that's why I'm asking the question, sir.

And also, I understand that you built the web-site, right?

Mr. Ramsey: That is actually correct. That's a matter of public record, yes.

Mr. Montgomery: Are the web-sites have links to Discovery Institute?

Mr. Ramsey: I believe there's a couple of links. Is that a problem?

Dr. McLeroy: Madam Chair, can I ask a parliamentary question?

Mr. Montgomery: I'm through. Thank you, sir. Thank you for taking the time to do this.

Chair Miller: Mr. Montgomery.

Dr. McLeroy.

Dr. McLeroy: Can I get a ruling from the parliamentarian when we start demanding answers that have nothing to these textbooks it's just — we'll be here forever. What's the actual —

Chair Miller: This is public testimony and it's public discourse at this point. And I think it's the will — it should be the will of this Board of how we want to proceed forward on this.

Dr. McLeroy: Well, I just thought, Mr. Montgomery, that was a very poor line

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of reasoning for what we're trying to accomplish.

Mr. Montgomery: Well, we'll wait and see what your reasoning is.

Chair Miller: Let's just — I'm going to ask — I'm going to ask that this Board, respectfully respect each other. And if you want to speak, please raise your hand and I will recognize you. But we, also, have a very long day. And I've asked that you all be very sensitive in your questions and your Q and A's to the people who have given — taken their time and effort to come down here.

So thank you very much, sir.

Mr. Ramsey: May I add one thing?

Chair Miller: Quickly.

Mr. Ramsey: Quickly. I am appalled by the fact that the very people that would vote to not hear world class, credentialed scientists on this issue, would then think that other people were not qualified by virtue of the fact that they had something else on their plate unrelated to this issue or maybe related. This country is about freedom. It is not about a litmus test that I can't have faith or outside activities in order to also contribute to the democratic process.

And I thank you for your time.

(Applause.)

What's new

By Robert Park

[Robert Park publishes the What's New column at <http://www.aps.org/WN/>. Following are some clippings of interest.]

The truth: what's worse than a lie detector that doesn't work?

A lie detector that does work. Such a device would invade our inner sanctum of privacy. Now that everyone, with the exception of DOE, knows the polygraph is less than worthless (WN 18 Apr 03), the search is on for a lie detector that finds out what people are thinking about. Most of the research has centered on brain scans that indicate which areas of the brain are activated. Now it's claimed that functional magnetic resonance can even distinguish between recall of true and false memories <http://www.sciencedaily.com/releases/2003/11/031111072018.htm>. I don't want to know. It's not the things I forget that bother me; it's the things I remember clearly that never happened.

Lie detectors: will they reduce insurance fraud in Europe?

For a while maybe. After one major auto insurer in the UK began using

voice risk-analysis software six months ago, a quarter of the stolen car claims were dropped. Now, the Daily Telegraph claims, other auto and home insurers in the UK and France hope to reduce fraud with voice analysis technology. WN assures readers it's just as accurate as the polygraph. Richard Nixon was so frustrated by White House leaks that he ordered polygraph exams for the entire staff. "Do they work?" an aide asked. "I don't know," Nixon is said to have replied, "but they scare the Hell out of people." As people get used to it, their fear wears off.

Polygraph: Green River killer passed a 1984 lie detector test.

DOE will subject all 4,500 employees with top-secret clearance to polygraph tests (WN 5 Sep 03). How likely is it that a polygraph test will uncover a spy, assuming there is one? In 1984, with the Green River body count at 46, Gary Ridgeway, who has since confessed to 48 murders, was cleared after denying he knew the most recent victim. Actually, he didn't know any of his victims. He passed a polygraph test. If the sheriff's office had used a coin toss instead of a polygraph (WN 18 Apr 03), it's even odds they would have wrapped up the Green River murders 19 years ago.



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