Institute For Theological Encounter With Science and Technology

Volume 54 - #3 Summer 2023 Bulletin

Wonder!

In Pope Francis' address[1] to the College of Cardinals at St. Peter's Basilica on August 30, 2022, he reflected on St. Paul's Letter to the Ephesians (1:3-14) where Paul praises God for revealing "the mystery of his will" and his plan for humanity. Pope Francis explained that Paul's hymn of praise is "born of wonder, a praise that will never become force of habit, as long as it remains rooted in wonder and nourished by that fundamental attitude of the heart and spirit." Pope Francis continues, "I would like to ask each of us, you dear brother Cardinals, Bishops, priests, consecrated persons, people of God: how is your wonder? Do you sense wonder at times? Or have you forgotten what it means?"

Scientists begin by wondering about something. Often a hypothesis develops and is tested. Sometimes it leads to a conclusion, but often it leads to more wondering and testing. In this bulletin, at least one of our writers questions whether we wonder at science enough. Or do we just take the test results as facts? We at ITEST support the scientists and their results. However, we also have faith and believe that science and faith can coexist and be supportive of one another.

For myself, I am a technologist. Often when faced with a problem to solve, I will test various hypotheses. Sometimes I get lucky and stumble onto the correct solution. However, in my life, I am more rooted in faith. I often go to daily Mass and just listen. God shows us the way. It may not be the way that I am planning or expecting, but it is the path that will be followed.

Another of our writers speaks of God slowly lifting the veil on His creation in a way that particularly gets the attention of scientists. While I am not a scientist per se, I am often amazed at how God's plan comes together. For example, I taught 6th, 7th, and 8th grade math for only one year about 40 years ago. One of the 7th grade students went on to become a priest in the St. Louis Archdiocese. As a result of the *All Things New* strategic planning initiative, that young man has become the pastor of my parish. I often wonder about God's plans for me, and I am amazed about His sense of humor. I always wonder at how some small incident becomes important in the future.

Several of the articles in this bulletin reference Word on Fire Institute's *Wonder: A Conference on Faith and Science* held in January 2023. Also included is a reprint of Father Robert Brungs' article on *Praise*, an abstract from a recent Ilia Delio webinar, a review of ITEST's webinar on the Eucharist, and a *Holy Homework* book review. Be sure to check out upcoming ITEST webinars.

I hope you enjoy this issue of the *ITEST Bulletin*.

Ralph Olliges

Ralph Olliges, Ph.D.
Editor, *ITEST Bulletin*

1 www.vatican.va/content/francesco/en/homilies/2022/documents/20220830-omelia-nuovi-cardinali.html

In This Issue...

Announcements

ITEST Webinars

Watch our most recent webinars on demand.

Medical Ethics with presenters: Kevin Powell, M.D. Ph.D., Rev. Nicanor Austriaco, OP, Ph.D., and Rev. Kevin FitzGerald, SJ, Ph.D., Ph.D.
www.faithscience.org/medical-ethics

Treating Human Embryos as Human Patients with presenters Elizabeth Rex, Ph.D. and George Mychaskiw, D.O.
www.faithscience.org/human-embryos

Missionary work in Pakistan and Afghanistan with presenters: Aqif Shahzad and Mary Elizabeth Kloska
https://faithscience.org/mission-in-pakistan/

Catholic Higher Education in a Culture of Death: Creating the World's Most Faithful Catholic Medical School with presenters: Stephen Minnis, Jere Palazzolo, and George Mychaskiw, D.O.
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Register now for these ITEST webinars.

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Presenter: Rev. Joseph A. Bracken, SJ
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Saturday, September 23, 2023
Science at the Doorstep to God with presenters: Rev. Robert Spitzer, SJ, Ph.D. and Thomas Sheahen, Ph.D.
https://faithscience.org/science-doorstep-god/

Registration coming soon for these webinars.

Saturday, October 21, 2023
Surviving Abortion: Inside and Out with presenters: Patrick Castle, Ph.D., Cynthia Toolin-Wilson, Ph.D., and George Delgado, M.D.

Saturday, November TBD, 2023
Theology and Teaching in Light of ChatGPT

Saturday, December 16, 2023
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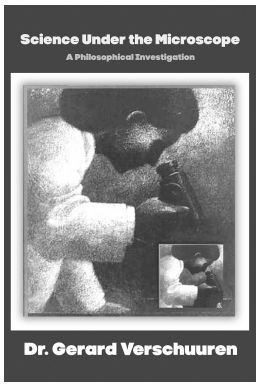

New Book

Science Under the Microscope A Philosophical Investigation

by Gerard Verschuuren

Every culture has its own sacred cows. In our culture, that sacred cow is science. What scientists claim—in the name of science and with the authority of science—is oracular. This book looks beyond the scientific nose through the lens of a philosophical analysis, which amounts to putting science under "the microscope of philosophy."

Purchase this new book at
enroutebooksandmedia.com/scienceunderthemicroscope/

In Memoriam

We ask your prayers for the following ITEST member who recently died and entered Eternal Life.

Frances T. Klosterman May 4, 2023
Msgr. Vincent Krische May 13, 2023

We also ask your prayers for ITEST members who are ill. May they feel the restoring hand of the Lord.

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- Mail a check to the address below.
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Thank you in advance for your support of ITEST!

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Unpacking Father Spitzer's Talk at the Wonder Conference

By Thomas P. Sheahen, Ph.D.

January 19, 2023

At the Wonder Conference in Dallas, Texas on January 13, 2023, Father Robert Spitzer, S.J., spoke on the topic "The Evidence for God from Science."

His intent was to show that God is a super intelligent transcendent creator.

To begin, Spitzer noted that young scientists are becoming more "theistic." They're now 65% theistic, compared to 35% agnostic or atheistic. Whereas, for a *combination* of older and younger scientists, 51% believe in God. Separately, among medical doctors, 76% say they believe in God or at least a higher power. Thus, the common claim that scientists are atheists is not really so. We are *trending* upward. S*omething* must be happening to change the percentage from the past. The reason this is happening is that new persuasive evidence is appearing to support belief in God.

Spitzer proceeded to describe that evidence: God is slowly lifting the veil on his creation in a way that particularly gets the attention of scientists. A century or so ago, the philosophy of *Logical Positivism* was dominant, and atheism accompanied that. The universe was found to be far larger than ever realized before, and therefore mankind was terribly insignificant. The notion of God as the creator seemed unnecessary to explain nature. But then things began to change.

The hypothesis proposed by Lemaître in 1927 about the origin of the universe has now been confirmed; there was a Big Bang, and the universe is 13.8 billion years old. It had a beginning, instead of just being there forever. The universe is expanding, indeed, at an ever-increasing rate. The point of Lemaître's discovery is that *it is necessary* that the universe had a beginning.

What we know from astronomy has greatly increased as well. There is visible matter, and dark matter, too, which is necessary to hold galaxies together. There is also "dark energy," which is the name given to a force that tends to expand the universe. But here's something to always keep in mind: scientific facts are always subject to change as better evidence accumulates. No theory, including Lemaître's, is ever truly *final*.

The amount of visible matter in the known universe is about 10^80 baryons, which equals 10^55 kilograms. Note that is a finite (but large) number; an infinite universe is NOT a tenable theory.

Now consider the fine-tuning of the universe. The universe starts off in a highly ordered state, which means it has low *entropy* (a numerical measure of disorder). It *has to be* low entropy for life to occur. When we ask, what are the odds of this happening by accident, it's one chance in $10^{(10^{123})}$. That is known as the "Penrose number," and it shows that the accidental universe is virtually impossible.

> ***God is slowly lifting the veil on his creation in a way that particularly gets the attention of scientists.***

A slight excursion is required here. The details are found in Roger Penrose's book *The Emperor's New Mind,* but the number is an estimate of the *phase space* occupied by each possible configuration of the universe. What is *phase space*? Imagine your own situation on the earth's surface. Perhaps your house and yard are on a plot of land 30 meters by 70 meters, in which case your land is 2100 m^2. The surface area of the earth is $4\pi R^2$, where the radius of the earth is R = 6000 km = 6,000,000 m. The ratio of your surface space to the entire earth is thus $2.1 \times 10^3 / 452.4 \times 10^{12} = 4.642 \times 10^{(-12)}$. The chance of finding you is only ~ 4 in a trillion. That's your "phase space" (in this two-dimensional example). If you consider the entire volume of the earth and estimate your height at 2 meters to obtain your assigned *volume*, your phase space would be trillions of times smaller. Now extend that type of thinking to all the different parameters that make up the configuration of our planet as we know it, with varied life forms, etc., and you can see that the calculation gets incredibly large. That line of reasoning and calculating leads to the Penrose number.

The Penrose number is impossible to write out for lack of ink; if each zero were represented by one atom, you'd have barely started when you run out of atoms. Recall what exponential notation means:
$10^2 = 100$, 10^6 = a million, 10^{12} = a trillion, and 10^{100} is only = $10^{(10^2)}$.

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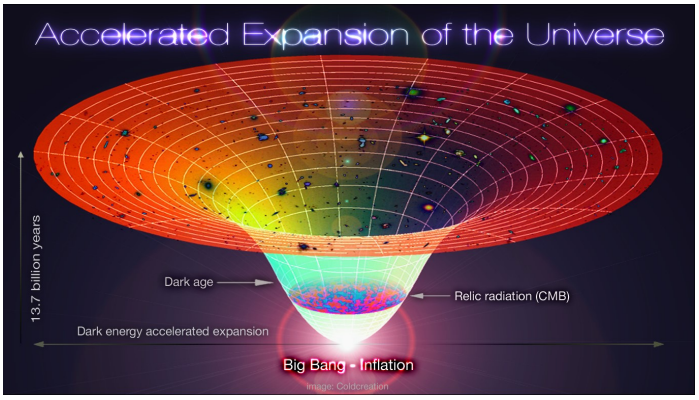
No one can get their mind around 10^(10^{123}), but one-chance-in-that is how unlikely our existence is by accident.

There are more finely-tuned numbers: The "cosmological constant" in the general theory of relativity controls whether the universe expands or contracts – and it has to be "Goldilocks" to get just the right rate of expansion. It's fine-tuned to one part in 10^{100}. If it were higher or lower, "we're dead," said Spitzer. That is, life couldn't have happened. The fine-tuning is really universal. The weak-force constant must be within 1 part in 10^{50}. 1 part too low and the entire universe collapses into a black hole; 1 part too high and entire universe expands without forming stars.

The electromagnetic force has 3 constants: mass of the proton m_p, mass of the electron m_e, and charge on the electron q_e. They must be precise to 1 part in 10^{39} for reasons having to do with convective instability of stars. A bit too high and only blue-giant stars form; a bit too low and only cold red-dwarf stars form. These odds-against are huge! For the electromagnetic force, tuning must be 1 part in 10^{39}. It is similar for hydrogen.



Big Bang-Inflation/Alex Mittelmann, coldcreation, via Wikimedia Commons

When we put all these fine-tuning requirements together, life is *very* improbable. This universe is SO enormously improbable that it could not have happened by accident.

Spitzer emphasizes the point that the most *reasonable* and *responsible* explanation is that God created all this fine-tuning in the universe.

But there are some inveterate atheists who won't accept that explanation and insist on considering alternative explanations. One is the "bouncing universe" where the universe expands and contracts again and again forever, but for entropy reasons this has zero chance of happening. Using the mathematics of *string theory*, some other explanations have been tried, but they don't work either. An important constraint was established by physicists Arvind Borde, Alan Guth and Alexander Vilenkin (the BGV theorem) who proved (in 2003) that *any* expanding universe *must have* a beginning. That eliminated a lot of excuses by atheists about "repeating" universes over an infinite amount of time.

Similarly, none of the proposed *Multiverse* concepts work either. In 2006, a new idea was proposed: the "fractal universe" where new universes keep bubbling up without limit. You could have an infinite number of bubble universes that last for an infinite amount of time. But that doesn't work because you'd have an infinite number of thermal vacuums. Soon you'd be talking about "Boltzmann brains" popping into existence in a thermal vacuum.

There is a legitimate physics concept of a *quantum fluctuation*, where an electron pops into existence and promptly disappears. In principle, multiple electrons or an entire atom could do likewise. However, the probability rapidly gets smaller with each additional electron. A "Boltzmann brain" is the imaginative notion of an entire human brain popping into existence briefly, complete with all your memories up to the moment as you sit in this room. The odds of that are about 1 part in 10^{90}. Of course, where you have infinite room to play around in, even such a vanishingly small probability isn't absolutely excluded. This would mean that *we* are all merely Boltzmann brains! That's what happens in an infinite multiverse. And NO ONE believes they are only a Boltzmann brain.

Moreover, any multiverse would need to have a beginning in time, and that constraint defeats the whole purpose of hypothesizing a multiverse in the first place. Ultimately, multiverse assertions are always rooted in a failure to understand what the concept of infinity means.

The second problem with the multiverse came from Hawking and Hertog. (See "Taming the multiverse" at www.cam.ac.uk/research/news/taming-the-multiverse-stephen-hawkings-final-theory-about-the-big-bang.) If there *were* a multiverse, you couldn't tell the difference between classical and quantum physics, and we know that's not so. There could only be a small number of universes, not an infinite number of them. (Others besides Hawking-Hertog have contributed to this.) The problems with the multiverse hypothesis are so severe that the notion is fading away into oblivion. Nobody buys it.

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The one explanation left is that we have a Creator. Alexander Vilenkin said in 2006 that a proof will convince even an unreasonable person. Physicists *must* address the beginning of whatever universe they want to talk about.

After all this, Spitzer makes the point that science is pointing emphatically and directly toward a transcendent Creator. He wrapped up this topic with a quote from astronomer Robert Jastrow's book *God and the Astronomers*: at the end of a long arduous intellectual climb, "… he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for years."

Father Spitzer's talk had a second short component: reviewing our current state of knowledge concerning *Near Death Experiences* (NDEs).

NDEs give evidence of a soul that survives bodily death. The data is amazing. Several medical journals have published articles about them. NDEs are *real*. An NDE means there is no voltage in the frontal cortex or elsewhere in the brain. The "soul" leaves the body and sees the surroundings as though looking from above; this includes even blind people! The patient who seems to have died undergoes experiences that are surprising. Reviewing a large body of such data, the *New York Academy of Sciences* in 2022 said it is highly probable that your consciousness will leave your physical body at death. It will seem that you are going someplace. In a *good* NDE, you will have the sense of "home." Then you come back into your body. This report from the New York Academy of Sciences cannot be dismissed; NDEs are not hallucinations, and there are thousands of examples.

The conclusion is that you *do* have a transphysical soul! God created an individual soul for each person, and that soul will survive bodily death.

The collected assembly of such new evidence is convincing an increasing portion of the scientific community to think more deeply and set aside the former easy excuse that there's no need for God. Unscientific commentators talking about what somebody else heard about science may cling to atheism, but among serious scientists, the return to theism is well under way. ■

New Materialism, Relational Holism, and Posthuman Life

A webinar presentation from the Institute on Religion in an Age of Science (IRAS)
with Dr. Ilia Delio, OSF

Insights from twentieth-century science and shifts in culture have given rise to new materialisms. Matter is not viewed as something static, fixed, or passive, waiting to be molded by some external force; rather, it is emphasized as a process of materialization. The term "new materialism" was coined by Manuel DeLanda and Rosi Braidotti in the second half of the 1990s and refers to the idea that the mind is always already material, and matter is necessarily something of the mind. The complex interaction among multiple forces spawns and re-configures in the new materialist and posthuman thinking whereby relationships are constantly being formed, unformed, and reformed. The new materialisms pose no division between language and matter: biology is culturally mediated as much as culture is materialistically constructed. The "posthuman" has become a key term to cope with an urgency for the integral redefinition of the notion of the human. Whereby the distributed cognition of the emergent human subject correlates with the distributed cognitive system as a whole, "thinking" is done by both human and nonhuman actors. Hence the posthuman ability to conceptualize oneself as an autonomous being, exercising one's will through individual agency and choice gives way to distributed personhood where the conscious agency is never fully in control. This talk examines the posthuman in light of technology and the new materialisms, with an emphasis on Teilhard de Chardin's insights on theogenesis and noogenesis, and his ideas on a new religion of the earth. ■

Watch this 2020 webinar at
www.youtube.com/watch?v=c8_eIpWW_dQ

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Wonder Conference 2023

Review of two sessions by Patrick Panozzo

The Word on Fire Institute hosted its inaugural "Wonder Conference" in Dallas, Texas this past January. It was billed as "an annual opportunity to engage with theologians and other experts on important issues at the intersection of the Catholic faith and secular culture." The conference was made possible and supported by the John Templeton Foundation and enjoyed a great deal of interest, selling out months in advance. Four keynote addresses were given with an additional nine breakout lectures over two days. Speakers included recognized experts in the fields of physics, philosophy, technology, theology, and history. Their primary task was to address the issue of a perceived incompatibility between faith and science, while promoting the beautiful harmony between faith and science that is at the center of Catholic tradition and experience.

The Conference opened with a keynote address from the highly recognized Father Robert J. Spitzer, SJ. In addition to his weekly show, *Father Spitzer's Universe* on EWTN, I have seen Father Spitzer speak on several occasions. His presentation is always engaging and enlightening, and much of the information he shared at this conference (cosmological evidence for the existence of a personal God) has been reviewed in past ITEST materials. I wish to begin with a brief review of the second keynote given by Dr. Karin Öberg, professor of astronomy at Harvard University. Her specialty is in astrochemistry, particularly the chemical processes involved in planet formation. She serves on the board of the Society of Catholic Scientists. I learned from her participation in the Thomistic Institute's video series on faith and science that she is Swedish by birth and an adult convert to Catholicism.

Karin I. Öberg, PhD

Professor Öberg's presentation was titled *"The Wonder and Limitations of Science,"* and she opened with the line "we do not wonder at science enough." Öberg asserts that science has gained this real pedigree as the arbiter of truth, yet it is still rare to step back and truly wonder at the remarkable insights gained by humanity over the centuries. She proposed several personal aspects of science that she finds particularly "wonderful." She highlighted advancements that have made human flourishing more possible. Linking certain discoveries to the Works of Mercy, she cited the discovery of dwarf wheat which feeds millions of people and significantly reduces hunger. She cited antibiotics, vaccines, and cancer treatments that heal the sick in large numbers. She also pointed out that information technology has done a lot to teach the ignorant across much of the world.

Perhaps the most memorable moment of Professor Öberg's talk came with her second example of the wonder of science and "its amazing ability to figure out truths of the material universe." To demonstrate this, she shared an animated video of a motor protein carrying material inside of a cell. The protein appears to walk with two legs and called to my mind a man pulling a fallen tree through a forest. I was curious as to how literal the image may have been, but the beauty and wonder of the video was remarkable to behold. This example served to demonstrate the causal powers of science, detectable within the complicated and beautiful cellular level of our bodies, as well as on the scale of the universe as a whole.

> ***"We do not wonder at science enough."***
>
> *~ Professor Karin Öberg*

Professor Öberg offered a third example of the wonders of science that flowed nicely from the second, namely the fusing of beauty with the search for truth. She said that scientists will very often say they are guided by beauty when formulating questions or seeking answers. In discussing her research into star formation, she made the point that a lot of subjective choices, decisions, and questions follow from the initial point of hypothesis formulation. Intuition is so critical to scientific discovery that she humorously claimed, "At the heart of what is supposed to be a hyper-rational process, you are basically calling on the Holy Spirit."

She went on to analyze the scientific method itself stating that validation of a hypothesis is never as firm a conclusion as falsifying one. Perhaps her boldest pronouncement of the talk (which she qualified by saying "in some sense") was that all scientific truths are "provisional" and subject to future hypotheses that may better fit the data. She added that unexpected newer theories are more provisional than those that may have been tested thousands of times over many decades. She then offered the example of evidence around the Big Bang hypothesis from one-

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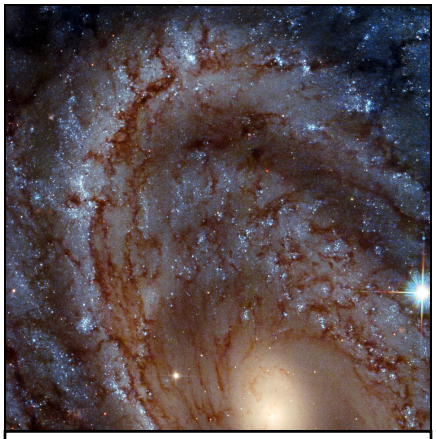
hundred years ago. The theoretical discovery of Albert Einstein led Father Georges Lemaître to propose the Big Bang. Despite much skepticism even after the observational discovery of Edwin Hubble, it took decades for the Big Bang to gain broad acceptance. Öberg said that others even shared Lemaître's interpretations but could not bring themselves to believe them. Even Hubble himself died not believing in an expanding universe, though he had observed evidence for it. According to Öberg, the mostly uncontroversial nature of the Big Bang today demonstrates a strength of science, that it can be skeptical toward new or untested assertions, while remaining open enough to allow for gradual acceptance over time.

The last part of Professor Öberg's talk presented a few of the limitations of science, though she was quick to add these were not critiques, but necessary boundaries. Her first example was to state that not all questions are scientific questions. Therefore, science is not equipped to provide answers to moral questions, the nature of beauty, or even the verification of most historical events. She did not use the term "scientism," though she concluded that scientific truth is not and cannot be the only form of reliable truth. The examples of truth or knowledge she considers outside the purview of science include theology, philosophy, art criticism, and the testimony of any subjective experience.

Three other limitations offered by Professor Öberg did not strike me as broadly accepted, at least not in the popular imagination. Namely, science cannot prove or disprove the existence of God, nor can it eliminate the possibility of miracles. In the former instance, God is outside of the material world that science can examine, though science can be a tool of discovery used to provide knowledge of the divine. In the latter case, science can provide evidence that may "purify" claims of the miraculous, but these claims are by their very nature beyond natural explanation. A third example of scientific limitation involves resolving questions around the very existence of the entire material order and the existence of a human soul. Both are equally beyond the reach of scientific conclusions.



Spiral Galaxy NGC 4603
Credit: ESA/Hubble & NASA, J. Maund
www.esahubble.org/images/potw2116a/

One final limitation of science was offered at the end of Professor Öberg's talk, and this one provided a summary of her entire thesis. Science is not self-sufficient. It relies on numerous assumptions of the cosmos and who we are as humans - things that cannot be proven scientifically. The main example that she cited is the order and intelligibility that allows for the scientific method to flourish. Scientific discovery then must assume the correspondence between our subjective experience and what is really there is a reliable exchange. Science must trust human reason to determine what is true and what is false based on unscientific assumptions.

Professor Öberg concluded with a reference to the Psalmist who wonders at the order of a vast universe and praises God for sharing his creation with a generosity so great.

Christopher T. Baglow, PhD

Bishop Robert Barron gave the third keynote address of the conference, and like Father Spitzer, he reaches a large audience, many of whom are ITEST members. I wish to briefly comment on one of the breakout sessions following the bishop's keynote. The breakout session titled *Science and the Bible* was presented by Dr. Christopher Baglow, the director of the Science and Religion Initiative in the McGrath Institute for Church Life at the University of Notre Dame. Professor Baglow's opening line set the tone for his talk stating that the creation account in Genesis 1 is "the beating heart of the intersection of the dialogue between faith and science." To bring Genesis into its proper context when engaging with modern science, he recommends three things: faith in the divine origin of scripture, faith that truth cannot contradict truth, and conviction that science has discovered amazing truths about the natural beginnings of the universe. As for this third recommendation, he added these discoveries should be cherished, not ignored or rejected by people of biblical faith.

As someone who teaches Scripture to high school students, I found his analysis of biblical inspiration of particular interest. Professor Baglow cites Saint Thomas Aquinas who referred to God's inspiration of Scripture as the "divine light of understanding" given as a form of prophecy whereby the Holy Spirit provides "intellectual light surpassing the light of natural

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reason." Two cases from the Old Testament illustrate the point. First, God speaks to Joseph through his dreams, but these are not inspired until the gift of interpretation is applied by him and he comprehends God's message for the Egyptians. A second case is underscored by Samuel who is not gifted with anything miraculous, only the insight to recognize that the first seven sons of Jesse are not what God is looking for in a king. Samuel's inspiration occurs only when he sees David, a young shepherd boy. He is given divine understanding and knowledge to anoint him. In this same way, the author of Genesis received divine light concerning the natural world as he knew it and judged it to be deeply ordered and interconnected with divine wisdom and goodness, a goodness willed into being by its Creator.

Professor Baglow's second movement within the talk was to take a tour of Genesis 1 to demonstrate how divine oneness, divine goodness, and divine wisdom are its core message. The divine understanding given to the author of Genesis becomes more apparent when seen in contrast to the Babylonian cosmology (found in the *Enuma Elish*) that it would have been culturally and intellectually set against. Ancient Babylon celebrated power and violence, ruthless conquest, and chaos. Ancient Babylonians would have expected many gods, whereas the author of Genesis promotes a single Creator God. The created world of Babylon comes about through warfare; in Genesis God wills the world into being through his wisdom and speech. In contrast to the world resulting from scheming plots and violence, the world in Genesis and everything in it is made good. This factor is illustrated with its view of humans created to be slaves to the gods and the blood spawn of a monster in Babylonian cosmology, whereas Genesis depicts humanity created in the divine image and declared as "very good" by God. In pagan understanding, only the ruler was the image of God. Genesis revolutionizes human thinking and enables the nativity stories of the New Testament to further reflect this inversion of power.

The poetry of Genesis is on obvious display in its use of the number seven.

Professor Baglow then asked what he called the "big question." Why wouldn't God give the author of Genesis the divine understanding to provide accurate scientific information? Why allow for such obvious inaccuracy and flawed data? His first response was to note how these questions are similar in kind to the diabolical questions asked by Satan when tempting Jesus in the desert. Jesus does not ignore or dodge the questions; rather he rejects the temptations to truly be a man among men. It would not have been possible for the author of Genesis to communicate his message in historical context with anything remotely close to the scientific knowledge that would come much later. Like Jesus, Revelation must be communicated to people living in a time, place, and culture that can "hear" it with ears capable of taking it in. God is patient and humans are not.

The final section of Professor Baglow's talk returned for a second tour of Genesis 1 to find what he calls "the genetic code of modern science." This code was identified through the distinct timeline, the number seven, and the causality of nature. The most significant claim made by the days and order of creation in Genesis 1 is what Professor Baglow calls "timeline thinking." The story expresses development, progression, increases in complexity, cosmic and biological evolution, beginning and end. The world of Genesis moves forward with real progress, always setting the stage for the next development. The sabbath, on the other hand, has no end because God's work has been completed and fulfillment is implied. Baglow claimed this was the fertilization and intellectual soil for the scientific revolution.

The poetry of Genesis is on obvious display in its use of the number seven. God's activity is claimed to be "good" seven times. The word for land, the name of God, and words throughout the verses are all presented in multiples of seven. Ancient numerology tells us that seven symbolizes completeness and perfection, yet the patterns are variable and unpredictable. Modern science will benefit from the order as well as the openness; there is law and flexibility, symmetry and surprise.

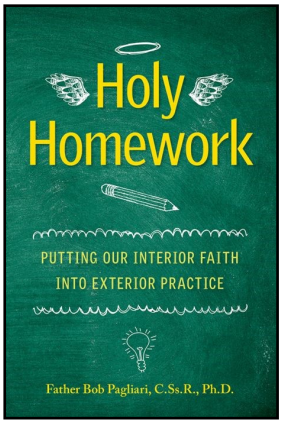
The final point of the talk maintained the scientific assumption of causality that is so apparent in Genesis. Saint Augustine recognized the differences in proclamations made in the story as to who was creating. God says, "let there be ...," but also "let the earth bring forth ..." and "let the waters …," reflecting the potentials hidden within the elements. Augustine refers to these potentials as "rational seeds" making a distinction between God acting unilaterally, and God acting through the earth and humanity as secondary causes. Baglow concludes that Saint Augustine fits hand in glove with Evolutionary Theory, and so too, that Genesis provides the seeds for modern science. ■

Holy Homework: Putting Our Interior Faith into Exterior Practice

by: Father Bob Pagliari, C.Ss.R.

Review by Ralph Olliges, Ph.D.

How many Masses have you attended in your lifetime? For me, it is over 3,500. Depending upon the priest, a sermon is given which may be interesting or boring. Some of the more interesting sermons have stuck with me. Obviously, the other ones have long been forgotten. Have you ever wondered what might help some priests provide better sermons?



I was intrigued by a Liguori Publications advertisement for a book called *Holy Homework*. I ended up purchasing the book, so the ad did its trick! I decided to review the book since it might spur some to provide better sermons. The book comes from a series of columns based upon anecdotes and stories from sermons given by Fr. Bob Pagliari. There is a total of 35 chapters that cover the year, and each is only one to two pages in length. Each chapter ends with a "holy homework" assignment which are often simple but profound. It is a quick read, but one that will remain with you for a long time. I would encourage you to read it.

Let me paraphrase one excerpt here as a sample. This one is entitled, "Why Fathers Pray." A mother and father had two sons. The older son, the author, was home for a summer visit from the seminary while the younger son came home from the military. They were gathered in the kitchen with their mother at the table and the father leaning against the door frame. The mother inquired of the sons which Sunday Mass that they were planning to attend. The younger son indicated that he was not planning to go, and furthermore, he has not gone to Mass since he left home. Well, the mother was simply aghast. As expected, the theological reasons for attending Mass were hashed out. Even after all of this debate, the younger son was unmoved. The father finally spoke and said that the obligation was not the reason that he showed up at church each week. The younger son asked his father, "Why then do you go to church each week?"

What do you think the father said?

*See **Holy Homework** on page 11*

Praise

by Father Robert Brungs, SJ

Reprinted from *ITEST Bulletin* Volume 39 #1

In this article the author wonders why, with the beauty and majesty of the heavens becoming more and more "available" to us, we don't break out in praise of the Creator. Where are the Psalmists of the 21st century?

I do not usually spend much time thinking about the quality of our praise of God. I don't suppose that a lot of us do. Recently, however, several things have come together which have led me to wonder why, with all the sophistication we have acquired (or think we've acquired), our praise in word and song is no better than the Psalmist's. The Psalms, written as long as three millennia ago, surpass our poetic sense of the marvels we have received from God's hand. I have been wondering about that now for some time.

One possible reason for this is that we no longer find awe in the heavens. Perhaps we think that, because we can predict some heavenly phenomena with great precision - things like the appearance of comets and eclipses or the crash of a comet into Jupiter - there is no mystery left in the heavens. Perhaps we are imbued with the notion that, if we can hang a name on something, it is somehow under our control. Yet to give the name pulsar, or quasar, or black hole or brown dwarf or whatever, to something out there does not give us any control at all. The Psalmist could look to the heavens and see the handiwork of God. What do we and our culture see there?

Today, we can see far beyond the ability of the Psalmist. With the invention of the telescope in all its forms we have expanded our sensorium beyond anything that could have been imagined even three hundred years ago, much less three thousand years ago. But even with our expanded sight and our discovery of galaxies, neutron stars, binary stars and things we can't name or understand, we have not poured out such praise of their Maker as did the Psalmist. Our physical vision has ex-

Continues on page 10

panded by many orders of magnitude, but our praise has not. This is only one area where science has provided us with an awareness of both the delicacy, complexity and awesomeness of physical systems.

As the Psalmist could look out and see the macroworld, we can now, with our array of various kinds of microscopes, behold a micro-world just as beautiful as the heavens. It is as complex a world with a delicacy of structure that we do not observe in the heavens. Yet, even with this much greater ability to see the handiwork of God that was hidden to the Psalmist, we have not surpassed the ancients in our praise of the Creator.

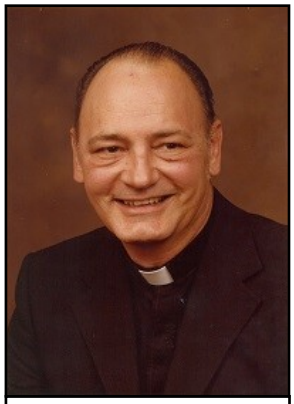
We now know, for instance, that all living systems are unified at the level of the amino acids. Still, our praise of the Creator has grown neither in its quantity nor quality. We are well aware now - another gift of the life scientists - that women as well as men contribute to the genetic makeup of their children. Yet, even after some hundreds of years, not all of our theology nor our liturgy has sufficiently incorporated that now rather basic notion.

In a certain sense, we can call the historical influence that science has had on our self-understanding, and on our understanding of the immense cosmos about us, a kind of demythologizing. We have become, and continue to become, aware of both our limits and our interconnectedness with the rest of creation. We have learned from Copernicus, Galileo and Newton that the heavens and the earth follow the same physical laws, that there is a physical unity throughout the universe. We have learned from Darwin that there is a unity of all living systems at the level of the species. The work with recombinant DNA has deepened our understanding of the unity of all living systems at the level of the amino acids, the basic building blocks of those systems according to our present understanding. Why doesn't this new awareness inspire our praise of God?

Can it be that Christianity itself has downplayed the poetic quality of our praise? Is it more difficult to be in awe of a God who is immanent in the cosmos and immanent in us - in Our Lord Jesus? Is it easier to praise a purely transcendent God who thunders on us exclusively from on high, who continually erupts in a completely unpredictable way into our history? The theory has a certain plausibility about it, doesn't it? What's the old saying about familiarity breeding contempt? God is so much easier to domesticate to our desires and horizons now that he has pitched his tent among us. I believe that we all do this and maybe none more than the highly educated and putatively sophisticated.

Both St. Paul and St. John teach us that creation is in Christ. The hymn Paul quotes in Colossians is clear evidence of creation in Christ. The Council of Chalcedon defined that Christ the Son of God is one and the same as Christ the son of Mary of Nazareth. Creation in Jesus Christ is creation in the incarnate God. Our wonder should be greater, not less. Part of the Christian problem may well be the notion that long ago came into theological currency that there was a "pure" nature that subsequently fell and needed redemption.

In such a theological understanding, creation is of less interest than redemption and we fall into the trap of some kind of "spiritual" Christianity that sees little value in the creation, in the material reality all about us. This, I would expect, would dampen our praise for God's handiwork as evident in all the beauty that surrounds us, from the unimaginably big to the imperceptibly small. One of the European cardinals asked the German theologian, Karl Rahner, not long after Vatican Council II, why devotion to Mary had declined. Rahner replied that many theologians had made Christ into an abstraction and abstractions had no need of mothers. In our own hearts we must catch the "adventure of specifics "that Christianity really is if we hope to have it on our lips and in our song.



Fr. Robert Brungs, SJ
ITEST Founder
1931-2006

While the scientific understanding of the past few centuries has diminished our stature as being at the physical center of the universe and being a species totally set apart from the other species, still it has enhanced our dignity as the people and the world to which Christ came and as the species into which he became incarnate. We know from revelation that our world is the center of the created universe in the order of salvation and the order of the final Kingdom of God. We know also that the human species is the one which God chose to enter physically. We know that in Christ we can master our drives and finally become integral and integrated persons - Freud notwithstanding.

Science has displaced our ideas that we are at the physical center of things; revelation has disclosed that in the new creation in Christ we are at the center of God's will for creation. Unfortunately, little of this information has penetrated into the consciousness or work of the ecclesial/theological community, especially, it seems, of those who specialize in creating or maintaining our liturgical praise of God.

Continues on page 11

This is not to place excessive blame on the magisterium or the theologians or even the liturgists. A share of the culpability can be laid upon the occupant of many a chair of humanities studies as well. This, of course, does not disqualify them from membership in the human race. If it did, the planet would practically be uninhabited. It does, however, harm the Church and limit the praise due to God. It stifles both the poetic and theological imagination of the Church. In short, it inhibits any real growth in our appreciation of the creation God has given us. Scientists are also to blame for the lack of praise we give. Indeed, there's plenty of blame to go around.

It is quite possible the whole course of the intellectual history of the world plays a part in our lack of wonder and our voiceless praise. I may be way off base in what follows; it's really little more than a reflection out loud. It does seem to me, however, that as we grow deeper in our learning and in our science and in our understanding, we tend to become more general and our thinking and expression becomes more abstract. The more sophisticated we become, the more abstruse we seem. It is possible that that may be the normal course for humans in a fallen world (I don't pretend to know whether such a way of thinking is a relic of original sin). But I think the observation is accurate. We tend to get more abstract in our thinking as we learn more and think we understand more. We also tend to look down on our predecessors who were far more specific in their dealings with each other and with God. I know people (maybe I'm one myself) who believe that something must be brilliant since they don't understand it.

Love, however, seems quite the opposite. The more deeply we love something, the more our attention is focused on specifics. We are more concerned with the shape of the nose, for example, the color of the hair than with some generalized form. St. Paul assures us that it's love, not knowledge, that makes the building grow. We say in our culture that love makes the world go around.

From all we know from Revelation, God is a God of specificities, not generalities. He doesn't need universal concepts to understand himself, us or all the mysterious creatures of the universe. Every year I more fully realize that it's always dangerous to say what God can or cannot do. But as far as we can tell, God doesn't work or know or love in general.

We have to reclaim our religious understanding from generality and from abstraction. Our creator is specific. Our savior is specific. Our King is specific. The Church is historical, therefore, specific. We are specific. Each of us is unique, without real human copies. This must be the wellspring of our love. And it is out of this love that our praise will mount to the heavens. Praise cannot be the property of only the untutored and unlettered. The educated, the sophisticated, the cultured must praise God as well.

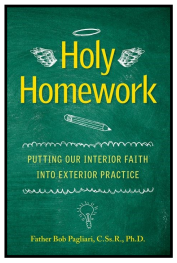
Why doesn't the Church attract the poet, the musician, the painter as it once did? This, I realize, is a tangled question since it deals with human motivation which is as tangled as anything in the universe. But if we love, we praise. It's as simple as that. And if we can bring to our love the vast repertory of our knowledge (accompanied by a realization of the greatness of our ignorance) we can praise God for those extraordinary and mysterious gifts he has scattered for us throughout the universe. Cannot we come to love and praise as greatly as the Psalmist did three thousand years ago?

Christ welcomed the little children and said: "Let the children come to me. Of such is the Kingdom of Heaven." Children are often extravagant in their praise of something that catches their imagination and fills their heart. So should we sober adults and scientists be, at least at times. What better place is there than Christian prayers for the "child-like" the whimsical, the artistic and the beautiful? ■

Holy Homework *from page 9*

The father said, "I go to pray for you. I can't watch over you like I did when you were little. I can't protect you anymore or try to teach you right from wrong. So, I rely on God. I go to church and pray that God will guide you through the tough times." With that the father left and went to bed. The others would soon retire for the night as well.

The father always liked to attend the earliest Mass on Sunday. As the father left for Mass, the older son and the mother also jumped in the car. The younger son who was unaware that the clock struck six o'clock twice each day was awake and dressed at the crack of dawn. He, too, jumped into the car. The young man has not missed a Sunday since. He discovered why his father prayed!



Check out the book for the homework assignment related to this sermon given on Father's Day! ■

https://www.liguori.org/holy-homework-putting-our-interior-faith-into-exterior-practice.html

The Wonder of the Eucharist

ITEST webinar review by Dr. Sebastian Mahfood, OP

On February 18, 2023, ITEST hosted a webinar entitled "Evangelizing the Real Presence - Miracles, Scripture, and Quantum Physics," which was delivered by Dr. David Keys and Ray Gerard. Dr. Keys is a medical physicist who has written two books - *Exploring the Belief in the Real Presence*[1] and *Discovering the Fullness of Reality*[2] - in addition to delivering numerous talks/webinars on a variety of faith/science topics. Ray Gerard is a show host on St. Joseph Radio and the St. Joseph Evangelization Network, and creator of the WCAT Radio series entitled *St. Paul's Letters to America.*[3] He also developed *The Humble Catholic*,[4] a website devoted to Eucharistic miracles and extraordinary experiences involving the Eucharist, on which over 300 such matters have been recorded.

Dr. David Keys

Ray Gerard

Keys and Gerard spoke of how the belief in the Real Presence, the teaching that the bread and wine in the Eucharist truly become the body and blood of Jesus Christ, is a matter of faith for Catholics. While it may not be possible to prove the Real Presence through scientific means, there are reasons to believe in it. The Church refers to the Eucharist by various names, emphasizing its significance and importance in the Christian life. However, studies have shown that a significant number of Catholics struggle to believe in the Real Presence. Some factors contributing to this include a lack of understanding of the Church's teachings, a disconnect between the Church and its members, and a failure to effectively address social issues and questions of faith.

Belief in the Real Presence requires a certain level of trust and faith. It is not solely dependent on empirical proof but involves a willingness to accept spiritual truths. While evidence such as Eucharistic miracles can support belief in the Real Presence, they do not provide absolute proof. Believing in spiritual matters often involves a progression from doubt to belief to knowing, and this journey varies for each individual. Trusting in the Church's teaching on the Real Presence can be supported by passages in Scripture and the promise of the Holy Spirit guiding the Church into truth. However, it is essential to seek knowledge and understanding of these teachings through studying Church documents, listening to reliable sources, and engaging in theological discourse. The Church's consistent teaching on the Eucharist throughout history provides a compelling account of its reality.

Additionally, the presence of Eucharistic miracles, where the bread and wine have undergone physical transformations, offers evidence that supports belief in the Real Presence. These miracles, although not conclusive proof, demonstrate a tangible connection between the physical and spiritual realms.

Ultimately, belief in the Real Presence is a matter of personal faith and trust in the teachings of the Church. It involves a willingness to accept spiritual truths even when they cannot be fully proven or comprehended by human means.

The webinar Q&A session was moderated by Dr. Cynthia Toolin-Wilson, author of *Survivor: A Memoir of Forgiveness*[5], a book about her mother's attempt to abort her in 1949.

Watch this webinar on demand at https://faithscience.org/eucharistic-miracles/. ■

1 https://enroutebooksandmedia.com/therealpresence/
2 https://enroutebooksandmedia.com/fullnessofreality/
3 https://wcatradio.com/letterstoamerica/
4 http://thehumblecatholic.com/
5 https://enroutebooksandmedia.com/survivor/

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