Institute For Theological Encounter With Science and Technology
Volume 53 - #1 Winter 2022 Bulletin

What books have you read lately?

This *ITEST Bulletin* is a bit different. It is not devoted to a single topic, but instead, we decided to use the bulletin to provide updates on many different topics, including a few book reviews.

We have a letter from one listener to the ITEST webinar from December 11, 2021 as well as a response to him. The webinar was titled, *Everywhen: God, Symmetry, and Time*. Find more information on ITEST webinars in this bulletin and on our website at https://faithscience.org/news-and-events/.

In another article, Tom Sheahen emulates the classic "Yes, Virginia, There is a Santa Claus" on the topic of the creation of the universe.

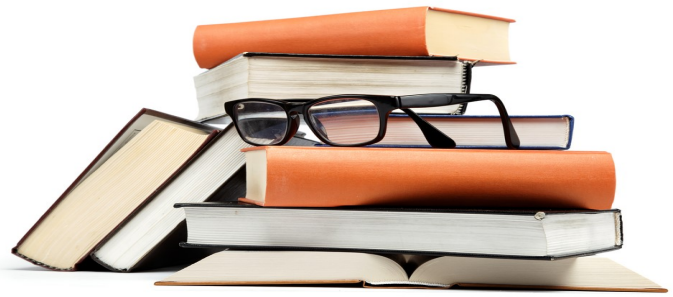
In addition, two very different book reviews on climate change are presented. Steven Koonin's book *Unsettled* focuses on how climate change is presented. Is it fair? Whereas, Tony Hiss's book *Rescuing the Planet* examines how one might go about protecting the planet. You will have to read the review or the book to understand if *50 by '50* will come true and what is meant by that slogan.

Included is a reprint of an article on the Catholic Church and Galileo arguing the church has always been open to science. Also appearing is an article on Eric Reitan's journey in faith.

Remember, as we encounter faith and science, sometimes things are controversial, but we leave it to you to decide.

Ralph Olliges

Ralph Olliges
ITEST Bulletin Editor



In This Issue...

Announcements

ITEST Webinars

Watch our most recent webinars at the links below.

- *Do you Believe? Theology & Science of the Eucharist*
- *Everywhen: God, Symmetry, & Time*
- *Assessing Contemporary Science in the Light of Faith*

Find all webinars at faithscience.org/news-and-events/

Register for these upcoming ITEST webinars.

- Saturday, February 12, 2022: ***Transhumanism & Transcendence: What are We Becoming?*** Presenters: Sister Ilia Delio, OSF and Nicholas Sparks
  Register: www.faithscience.org/transhumanism
- Saturday, March 19, 2022: ***Conscious Energy and the Mission of ITEST;*** Presenters: Joe P. Provenzano, Ron D. Morgan, and Dan R. Provenzano
  Register www.faithscience.org/Conscious-Energy

Special Notice

In preparation for the March 19th ITEST webinar, the author of ***Conscious Energy and the Evolution of Philosophy***, Joe P. Provenzano, has sent every ITEST member a complimentary copy of his new book. If you do not receive the book by February 23, 2022, contact Sheila Roth at ITEST@archstl.org. Register for the webinar at www.faithscience.org/Conscious-Energy. Your friends can purchase the new book at www.enroutebooksandmedia.com/consciousenergy.

In Memoriam—ITEST Members

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

The Honorable Judge Thad Niemira	**11/06/2021**
Reverend Joop Schopman, S.J.	**11/25/2021**

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

Membership Renewal

Membership renewal notices have been sent and we thank those who have already renewed. As an ITEST Member, you receive the quarterly *ITEST Bulletin*, monthly email newsletters, webinar and conference discounts, and the opportunity to network with those who are attentive to faith/science issues. Renew by mailing a check or pay at https://faithscience.org/membership-information/.

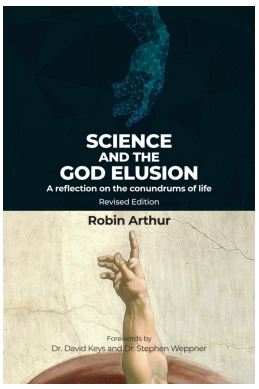
ITEST Gift Memberships

Would you like to give an ITEST membership as a gift to someone? Use one of the following methods.

- Mail a check to the address below,
- Pay by credit card number over the phone, or
- Pay on our website at www.faithscience.org/membership-information/.

To initiate the gift membership, please provide the following about the giftee: full name, mailing address, email address, occupation, and relation to the faith/science field. Thank you for your generosity!

New Book



Science and the God Elusion: A Reflection on the Conundrums of Life (Revised Edition)

by Robin Arthur

This intelligent and wise book demonstrates that the so-called conflict between science and religion is fundamentally misconceived. Seen in their proper complementarity, they jointly illumine life's mystery and many conundrums. Purchase at https://enroutebooksandmedia.com/godelusion/

Note: If you are receiving a printed copy of this bulletin and you would like to receive the bulletin via email instead, please send your email address to our Administrative Assistant, Sheila Roth, at ITEST@archstl.org.

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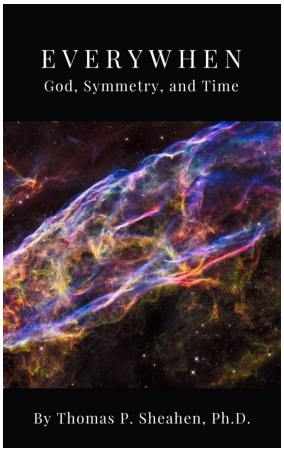
Sheila Roth, Managing Editor ISSN 1073-5976 • Copyright © 2022

Op-Ed: Freedom All the Way Up

The following letter is feedback from the December 11, 2021, ITEST webinar, *Everywhen: God, Symmetry, and Time.*

Watch the webinar on demand at www.faithscience.org/everywhen/.
Buy the book at www.enroutebooksandmedia.com/everywhen/.



Dear ITEST Leadership,

On Saturday, December 11, 2021, I enjoyed listening to the ITEST webinar on Dr. Thomas Sheahen's new book *Everywhen: God, Symmetry and Time.* After the lecture, I offered some comments to the group assembled for the webinar. In what follows, I expand on those same comments. First of all, I was surprised that both Sheahen and especially his commentator, Rev. Lawrence Brennan, accepted without question the classical understanding of the creation of the world by God through top-down causation. That is, everything that exists in this world is ultimately determined in its existence and activity by God as an omniscient and omnipotent Cosmic Architect. Yet there is also a quite different way to understand evolutionary change, namely, through bottom-up causation, provided that the components of the entity undergoing evolution are in active communication with one another and thereby able to exercise reciprocal causality vis-à-vis one another. Moreover, this approach to physical reality is also standard practice in contemporary natural science. At the same time, scientists deliberately prescind from offering any further explanation for the apparent emergence of life from non-living components. Such philosophical statements cannot be empirically justified. Terrence Deacon, for example, in *Incomplete Nature: How Mind Emerged from Matter* (2012), first rejects the top-down explanation of the emergence of life and mind from classical metaphysics and proposes instead a "habit-taking" tendency of Nature that he himself derives from a misreading of the philosophy of mind in the work of C.S. Peirce. Neither can he appeal to the research of Jesper Hoffmeyer in the new discipline of biosemiotics to provide an answer here since Hoffmeyer only allows for the sharing of information among more complex molecules and rejects that possibility among atoms as the ultimate components of reality.

I make a counter-proposal on the basis of two recently published books. The first, entitled *In God's Image: An Anthropology of the Spirit,* was written by Michael Welker (University of Heidelberg, Germany) for the Gifford Lectures 2019-2020. Therein he claims that the psychological gap between the Infinite and the finite is so great that an authentic experience of the Divine Spirit in one's life can only be inferred from linking it to multiple images of the human spirit at work in human life, above all in conjunction with other natural human virtues (e.g., justice, freedom, truth and a sense of peace). That is, we feel the effects of God's self-giving love for us more from our own experiences of self-giving love for one another in the form of concrete social action to address their needs. In a similar vein, Christian Barrigar (Pastor of St. Peter's Anglican Church in Montreal) has written a book entitled *Freedom All the Way Up* in which he claims that God created the universe to provide the proper existential conditions for the gradual emergence of finite *agape*-capable beings who are engaged in *agape*-love relations not only with God but with one another as sentient creatures. By studying these existential conditions in the light of evidence provided by the natural and social sciences, many other human beings are learning to understand and apply a more sophisticated philosophical understanding of reciprocal causality as the basic principle of evolutionary change. For, given the principle *ex nihilo, nihil fit,* only entities already endowed with a principle of corporate self-organization can over an extended period of time develop into a well-ordered life-system that bears some limited resemblance to the communitarian life of the three divine persons in their *agape*-love for one another and all their creatures. In this way, Christian systematic theologians might well learn from practicing scientists how to deal effectively with groups of entities rather than simply with individual entities face-to-face. In this way, the communitarian life of the divine persons might well become the prime analogate for human life in this world and for extended human life someday within the ever-lasting divine life-system.

With all best wishes for the leadership and all the members of ITEST in 2022, I remain

Sincerely yours.

Joe Bracken, S.J.
Xavier University
Cincinnati, Ohio

(Response on page 4)

Response to Op-Ed

It is true that I have a "top-down" outlook, insofar as I think God created the symmetry principles (and maybe a few other foundational principles, such as quantum uncertainty) and then all of creation as we know it unfolded from that initial brilliant creation by God.

I don't think that's incompatible with the "bottom-up" viewpoint, in which the ***freedom*** inherent in God's creation allowed extremely diverse pathways to branch out. Those led to a bunch of dead ends (gas clouds that never condense, white dwarf stars, dinosaurs, etc.), but also to living sentient beings who are capable of loving God in return. I see that as one of those "both/and" answers that people need to look at more diligently in order to discern.

With God being *present* to all time, there is no significance to any sequence of events within time. The sequential measurement of events in linear time is ***our*** problem, not God's. We use phrases like "God knew ahead of time that [X would happen]," but that clumsy construction is simply because we are incapable of matching God's *omnipresence*.

My intent all along with ***Everywhen*** has been to stimulate original, creative thinking by others. The topics Fr. Bracken brings up indicate that is what is happening. More questions and conversation are entirely welcome.

— Tom Sheahen

ITEST for the Future: Science, Philosophy, Theology

By Eric A. Reitan, OP, PhD

Reprinted from ITEST Bulletin Vol 39 #1 – Winter 2008

I grew up in a faithful Lutheran family, the son of a biology professor, a man of strong convictions, a Darwinian and a practicing Lutheran, and the son of a preacher's kid, a woman devoted to her father, who was himself a Lutheran Minister, a democratic socialist, and an opponent of dialectical materialism and scientific reductionism. I rejected organized religion at the mature age of 9 or 10 and was a full-fledged atheist --- not simply an agnostic --- by the ripe old age of 14 or 15. I went to college as a scientific atheist, convinced that modern physics was the highest human wisdom, that fundamental particles moving according to the immutable laws of nature explained all that is, was and ever will be. Religion was a crutch for those too stupid or too weak to understand or to handle the harsh realities of the natural world; God was a projection of the human heart's longings and desires, arising from fear and powerlessness, a hope that not only the fittest would survive and flourish; and immortality mere wishful thinking for those too timid to stomach the thought of perishing forever into boundless empty space and endless indifferent time.

Now a Catholic priest, a professor of philosophy, and a teacher of seminarians, I maintain my fundamental scientific outlook on the world. In fact, it was my scientific curiosity, my desire to understand the world of nature, that moved me to acknowledge the existence of God, the immortality of the human soul and the action of the Holy Spirit in human history. For me, "science" --- natural science --- was, is, and always will be the foundation of my faith, the source of my religious sentiments and the basis of my theological worldview. Grace perfects and completes nature; faith complements and rises above reason; religion affirms and raises up (or, is at least meant to raise up) all that is truly human, all that borders on the divine within us. It was my studies of Aristotle and Thomas Aquinas, or rather, my study of nature with the aid of Aristotle's and Aquinas' insights, that opened up my narrowly mathematical and physical outlook to the reality of transcendence and immateriality, in knowledge, in causality, and in real existence. With a broader understanding of physical reality than is generally allowed by modern mathematical science, with a more holistic view of natural substances, a more varied and complete account of physical change and causality, Aristotle arrived at the existence of the Unmoved Mover, a being (or, rather, something beyond "a being") that is completely immaterial, separate from change and motion, outside of time, infinite in power, with no need of improvement and no possibility of corruption, something which, Aquinas says, all people call "God."

Continues on page 5

It was Aristotle's empirically grounded and scientifically reasoned argument for the Unmoved Mover, along with Aquinas' careful and critical acceptance of that argument, that enabled me to perceive the causality of God within all the intricate workings of nature and to recognize the providential hand of God's wisdom and love throughout the whole of history. The central mysteries of our Christian faith --- the Trinity, the Incarnation --- do not, and indeed, cannot, contradict our knowledge of the universe created, sustained, and moved to action and completion by the one God of faith and reason. Neither can our truly scientific understanding of nature destroy the fundamental tenets of our redemption and salvation.

The central mysteries of our Christian faith --- the Trinity, the Incarnation --- do not, and indeed, cannot, contradict our knowledge of the universe created, sustained, and moved to action and completion by the one God of faith and reason.

What passes for faith, religion, and theology in our own day (as perhaps in any other day) is sometimes no more than wishful thinking, an irrational clinging to traditional certainties in the face of modern confusion, a promotion of personal preference or a maintenance of some perceived cultural identity, whether traditional or contemporary, in our constant struggle for power and survival. Moreover, what passes for science or scientific knowledge of nature is sometimes no more than a fanciful interpretation of a rigidly narrow-minded mathematical and materialistic outlook that refuses to question its foundations and methods or to acknowledge the limits of strictly experimental and quantitative techniques of analysis. I challenge all of us who inhabit these "two cultures" to open our minds and imaginations, to engage in a "common quest for understanding," to live and to work together for a better world, rooting ourselves in the concrete experiences of nature and history and opening ourselves to the realities that lie beyond our present horizons.

Through my own historical studies of science and philosophy, in the thought of Aristotle, Albert the Great and Aquinas, Galileo, Descartes, and Newton, Einstein, Heisenberg, and others, I have come to believe that it is possible to formulate an integrated worldview, based in natural science and incorporating philosophical and theological insights. In fact, I believe that it is truly impossible to be a philosopher or a theologian without first being a natural scientist.

An understanding of "nature" and "body" and "human being" and "change" begins with physical, chemical, biological, and psychological concepts and realities. Any philosophical or theological analysis of these realities presupposes and depends upon our initial mathematical and empirical treatments of these natural, created, and ultimately redeemed realities. However, I believe that our empirically grounded analysis must go beyond the mathematical and mechanical to consider the whole physical reality in all of its complexity --- its aims, its internal structures, its qualitative features, and its causal effectiveness and capacities for change.

I believe that some kind of philosophical analysis of natural realities, grounded in our empirical experience, can help to bridge the gap between our modern dichotomies of body and soul, matter and spirit, fact and value, science and religion, and so help us to deal more effectively with issues of life and death, sexuality, personal freedom, and social justice. Critical, historical studies of the relationships among science, philosophy, and theology are absolutely necessary if we are to develop a broader vision of nature in our own day and if we are to arrive at an ever more critical, rigorous, and realistic assessment of the limits of philosophical and theological speculation. Perhaps we can in this way re-evaluate the apparent conflicts between science and religion and formulate for ourselves a worldview that realistically deals with the brute facts of nature and opens hopefully into a world of truly human and ultimately divine wisdom and peace and love.

Yes, Virginia …

By Tom Sheahen

Q. The Bible says "God so loved the world that He sent His only-begotten Son ...." But my astronomer friends say that with the universe as old and as vast as it is, there is no way God could care about our dinky little planet going around a minor star in an ordinary galaxy. Can God possibly care about people like me?

-- Virginia

Virginia, your learned friends are wrong.

They have been affected by the skepticism of a skeptical age. They think that nothing can be which is not comprehensible by their little minds. All minds, Virginia, are little. In this great universe of ours, man is a mere insect, an ant, in his intellect as compared with the boundless world about him, as measured by the intelligence capable of grasping the whole of truth and knowledge.

Some readers may recognize the above words as written by Francis Church in 1897 for an editorial in the *New York Sun*. (See sidebar on page 7.) But after a century of astonishing advances in science, of tremendous theories beyond anyone's imagination back then, these words are equally true today.

We have indeed come a long way over a century, and physicists, chemists, and biologists know a *lot* more than in the past. But the most important thing a physicist learns is about the limits of our knowledge. There are things that scientists do not know, *and* we can be sure that we are not going to know these things via science – human knowledge comes with limitations. One major advance of 20th century science was Quantum Mechanics, which includes the *Uncertainty Principle*, which sets a limit on how well you can possibly know extremely simple things, like where something is or how fast it's moving.

125 years ago, most scientists believed the entire universe was *deterministic*, and that if you could only specify all the details at one instant of time, you could calculate what was going to happen, forever. As for God, many scientists believed that he just wound up the clock of the universe and set it in motion and didn't do anything after that. Ever since the days of Isaac Newton, *time* was considered an absolute quantity that nothing could affect. Everything was subordinate to *time* … even God.

And then along came Albert Einstein, who said that space and time are not absolute quantities, but are related to each other, forming a *space-time continuum*. Instead of a three-dimensional world that goes forward along the arrow of time, Einstein's *Theory of Relativity* stated that the universe is actually four-dimensional, composed of both space and time. The symmetry of Einstein's set of equations was so beautiful that it completely convinced all physicists of the validity of his model. The absolute-ness of time was abandoned, determinism was discarded, and scientists realized they hadn't dug very deep after all.

With that, our understanding of the universe changed dramatically. The mathematics underlying the universe said to even the most arrogant of scientists: "Hey, fella, somebody a whole lot smarter than you thought all this up!" We gradually realized that our viewpoint is terribly limited – that we can only grasp a small fraction of reality. It was a big dose of humility for scientists, but it was necessary. We understand now that there is a big difference between the very little human mind and "the intelligence capable of grasping the whole of truth and knowledge."

Fast-forward over a century of progress: In physics, relativity, quantum mechanics, quantum electrodynamics, quantum chromodynamics. In engineering, airplanes, TV, computers. In biology, antibiotics, recombinant DNA, non-invasive ways to see inside the human body. The list goes on. Our belief in mathematics and symmetry and the scientific method has served us well. The latest hot topic in physics is *superstring theory*, which asserts that there are not three spatial dimensions but 10, and six of them are "rolled up" so you can't find them or make measurements upon them. All you can have is *indirect* knowledge, based on trusting theory to carry you many steps forward as strings form quarks which form nucleons which form atoms ….

Francis Church's editorial of 1897 makes another good point: "You tear apart the baby's rattle and see what makes the noise inside, but there is a veil covering the unseen world which not the strongest man, nor even the united strength of all the strongest men that ever lived, could tear apart." Surprisingly, modern physics has brought us up to that veil, and the greatest atom-smashers in the world can't get us beyond it. Quantum theory assures us that we can't know it all.

Continues on page 7

Through it all, scientists stand open-jawed and *in awesome wonder, consider all* that lies before us, both known and unknown. On the one hand, we are **very** impressed with the vastness of the universe; but on the other, we are even **more** impressed that it all makes sense, that the entire story hangs together. There is a unity that pervades all of science, and that unity points very clearly to the realization that *Someone* is in charge.

About 1600 years ago, long before anybody heard of the theory of relativity, a learned man (St. Augustine) said that God created space and time together and sees the entire universe as a unit. God is not subject to the limitations that encumber human beings; God does *not* have to sit around, and watch time go by; God is simply *present* to every point in space and time. St. Augustine could have written the children's song "He's got the whole world in His hands." Since Einstein, we might revise that to "He's got the space-time continuum in His hands." God is not confined to live *within* time and space; He *created* time and space. (Perhaps we should say "*creates*" instead of using the past tense.)

Somewhere in high school or college we start using graph paper, and learned to read *logarithmic* graph paper, in which every factor of 10 takes up the same amount of space. Two-cycle logarithmic graph paper covers from 1 to 10 to 100; three-cycle from 1 to 1000; and 20-cycle paper would cover 20 orders of magnitude. If time is the variable, we can fit all the times about which we know anything at all onto a single sheet of 60-cycle graph paper -- the age of the universe condensed onto one page.

> *"Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world."*

Well, if mere mortals can comprehend this, surely we'll agree that God can understand advanced algebra too – probably got an A+ in the course. Is your location at some pinpoint X on a planet 3 x 10^{11} meters from the center of a galaxy somewhere? Is your time coordinate 4 x 10^{17} seconds? No problem. It's all right there in front of God, who is simply present to all different ages and different places. The word is *omnipresent*. Paying attention to *one* point in space-time (where you are, Virginia) is easy for God.

You will say "that's mind-boggling" and you're correct: the very limited, very small *human* mind boggles at really big numbers. What we really need to appreciate is not how big the numbers are, but how limited the human mind is.

As Francis Church wrote, "Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world." That point has gradually sunk in with scientists. By accepting with humility that we don't know it all, and that our scientific instruments only investigate a small slice of reality, we realize that reality extends far beyond the boundaries of science. Love and generosity and devotion exist, and we know that they give to life its highest beauty and joy.

The original *Is There a Santa Claus?* article can be found at
https://www.newseum.org/exhibits/online/yes-virginia-there-is-a-santa-claus/

We take pleasure in answering at once and thus prominently the communication below, expressing at the same time our great gratification that its faithful author is numbered among the friends of THE SUN

"Dear Editor: I am 8 years old. Some of my little friends say there is no Santa Claus. Papa says, 'If you see it in THE SUN it's so.' Please tell me the truth; is there a Santa Claus?"

VIRGINIA O'HANLON
115 West Ninety-fifth Street

VIRGINIA, your little friends are wrong. They have been affected by the skepticism of a skeptical age. They do not believe except they see. They think that nothing can be which is not comprehensible by their little minds. All minds, VIRGINIA, whether they be men's or children's, are little. In this great universe of ours man is a mere insect, an ant, in his intellect, as compared with the boundless world about him, as measured by the intelligence capable of grasping the whole of truth and knowledge.

Yes, VIRGINIA, there is a Santa Claus. He exists as certainly as love and generosity and devotion exist, and you know that they abound and give to your life its highest beauty and joy. Alas! how dreary would be the world if there were no Santa Claus. It would be as dreary as if there were no VIRGINIAS. There would be no childlike faith then, no poetry, no romance to make tolerable this existence. We should have no enjoyment, except in sense and sight. The eternal light with which childhood fills the world would be extinguished.

Not believe in Santa Claus! You might as well not believe in fairies! You might get your papa to hire men to watch in all the chimneys on Christmas Eve to catch Santa Claus, but even if they did not see Santa Claus coming down, what would that prove? Nobody sees Santa Claus, but that is no sign that there is no Santa Claus. The most real things in the world are those that neither children nor men can see. Did you ever see fairies dancing on the lawn? Of course not, but that's no proof that they are not there. Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world.

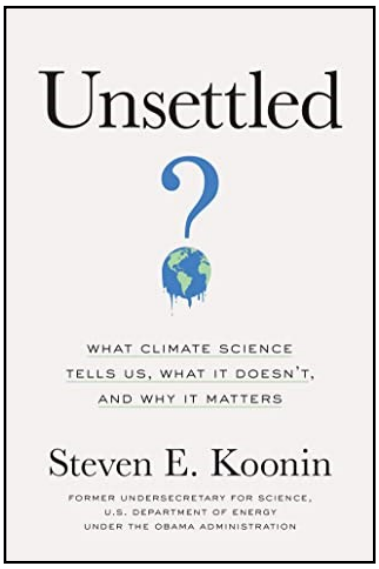
You may tear apart the baby's rattle and see what makes the noise inside, but there is a veil covering the unseen world which not the strongest man, nor even the united strength of all the strongest men that ever lived, could tear apart. Only faith, fancy, poetry, love, romance, can push aside that curtain and view and picture the supernal beauty and glory beyond. Is it all real? Ah, VIRGINIA, in all this world there is nothing else real and abiding.

No Santa Claus! Thank God! he lives, and he lives forever. A thousand years from now, VIRGINIA, nay, ten times ten thousand years from now, he will continue to make glad the heart of childhood.

Unsettled: What Climate Science Tells Us, What it Doesn't and Why It Matters

Author: Steven E. Koonin

Review by Ralph Olliges



Steven E. Koonin, a top science adviser to the Obama Administration, draws upon his decades of experience to provide up-to-date insights and expert perspective, free from political agendas.

Yes, it's true that the globe is warming, and that humans exert a warming influence upon it. Both the research literature and government reports that summarize and assess the state of climate science state that heat waves in the US are now *no more common* than they were in 1900.

Koonin is a public critic of how climate science is presented. News is ultimately a business. Reporting on the scientific reality that there's been hardly any long-term change in extreme weather doesn't produce a ratings gain. Only flamboyant headlines "make the cut."

Koonin asserts the following:

- "Humans exert a growing, but physically small, warming influence on the climate. The deficiencies of climate data challenge our ability to untangle the response to human influences from poorly understood natural changes.
- The results from the multitude of climate models disagree with, or even contradict, each other and many kinds of observations.
- Government and UN press releases and summaries do not accurately reflect the report themselves.
- In short, the science is insufficient to make useful projections about how the climate will change over the coming decades, much less what effect our actions will have on it."

Koonin wants us to have all of the information to make good judgments; not just the information that leads us in one particular direction. The first part (Part I) of his book is about the science of the changing climate, while the second part (Part II) of the book is about the response that society could make to those changes. He draws a distinction between what society *could* do, what it *should* do, and what it *will* do in response to a changing climate.

Koonin reminds us of the well-known phrase "climate is what you expect, weather is what you get." Because climate is an average over many years, it changes slowly. It takes at least a decade of observations to define a climate, and so two or more decades to identify a change in it. He questions the extent to which humans have caused the warming of the globe.

There are many things we *could* do to reduce human influences on the climate (though they wouldn't necessarily stop the climate from changing). Koonin's "high-level view" of the context for society's response:

- "Keeping human influences on the climate below levels deemed prudent by the UN and many governments would require that global carbon dioxide emissions, which have been rising for decades, vanish sometime in the latter half of this century.
- Emissions reductions would have to take place in the face of strongly growing energy demand driven by demographics and development, the dominance of fossil fuels, and the current drawbacks of low-emissions technologies.
- These barriers, combined with the uncertainty and vague nature of future climate impacts, mean that the most likely societal response will be to adapt to a changing climate, and that adaptation will very likely be effective."

For greenhouse gas emissions to decrease enough (and at a sufficiently rapid pace) to stabilize human influences on the climate in the foreseeable future, there would have to be dramatic changes in policies.

One possibility is outright regulation: Either (1) coal-fired power plants shall cease operation within a decade, or (2) new gasoline-powered cars cannot be sold after 2035. Alternatively, the government could induce lower emissions by imposing a financial penalty for every ton of greenhouse gas emitted into the atmosphere. Emissions-reduction policies would be

Continues on page 9

most effective if they were focused on reducing emissions. Efficiency is about how well we use energy, not about how much we use - *that* is conservation. And for the purposes of reducing emissions, conservation is what matters.

There are at least two ways to counter warming of the planet. One is to make the earth a bit more reflective, so that it absorbs a bit less energy from the sun. This strategy is termed Solar Radiation Management (SRM) and would be appropriate whether the warming is natural or the result of human influences. Alternatively, we could pursue Carbon Dioxide Removal (CDR), which is just what it sounds like: sucking some of the CO_2 back out of the atmosphere to directly off-set human emissions.

Here's why Koonin thinks adaptation *will* be our primary response:

- "**Adaptation is agnostic**. Humans have been successfully adapting to changes in climate for millennia….
- **Adaptation is proportional**. Modest initial measures can be bolstered as and if the climate changes more.
- **Adaptation is local**. Adaptation is naturally tailored to the different needs and priorities of different populations and locations.
- **Adaptation is autonomous**. It is what societies do, and have been doing, since humanity first formed them….
- **Adaptation is effective**. Societies have thrived in environments ranging from the Arctic to the Tropics."

The climate is changing, humans are playing a role, and yet our global energy needs are growing, too. We also need to get better at communicating climate science. The public deserves complete, transparent, and unbiased assessment reports. We need to reduce the hysteria in climate journalism. What's more, the models we use to predict the future aren't able to accurately describe the climate of the past, suggesting they are deeply flawed.

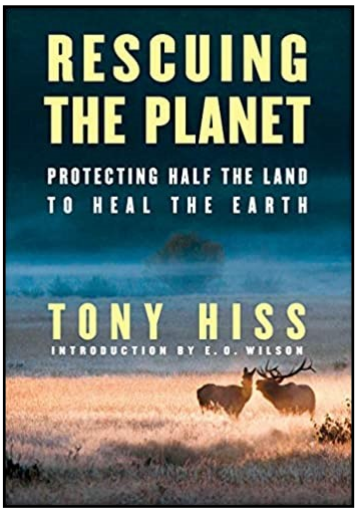
What do you think of Koonin's analysis?

Purchase this book at www.amazon.com/Unsettled-Climate-Science-Doesnt-Matters/dp/1950665798

Rescuing the Planet: Protecting Half the Land to Heal the Earth

Author: Tony Hiss

Review by Ralph Olliges



Tony Hiss's book *Rescuing the Planet: Protecting Half the Land to Heal the Earth* has the following premise: "Maybe we can save the world after all." Hiss's excellent book helps us understand how it can happen. According to Hiss, climate change is only the first of at least three crises wrought by humanity that is destined to inflict major damage on the planet. Also well advanced are the growing worldwide shortage of fresh water and the mass pauperization of extinct species that lead to the collapse of ecosystems. He uses the estimate that as a direct result of humanity's destructive actions on the landscape, one million species of plants and animals are likely to go extinct.

"The Big Three: Siberia, the Amazon, and the Boreal," are all about the same size in land mass. But in Siberia roughly 50 percent of its natural resources have been lost. More than 20 percent of the Amazon, where the rate of deforestation is spiking, has been destroyed. The Boreal is nearly 85 percent intact, and the ecosystems of this little-known faraway place continue to do indispensable work on the planet's behalf. The North American Boreal Forest, mostly in Canada, partly in Alaska, is the largest and most intact wilderness left in the world. Its trees are both rich in birds and carbon. Canada has moved to protect a lot of it.

Hiss argues for the idea of Indigenous Protected Areas (IPAs) which can be set up more quickly than conventional national parks. IPAs will be staffed by Indigenous Guardians. Whereas national parks such as Yellowstone were created by taking land away from Native Americans. IPA parks will never be set up by

Continues on page 10

stripping landscapes from the people who were there first and have looked after them since.

The Boreal Forest will never be farmland because its soils are too thin and acidic while the growing season is too short. When it is warm, there are too many insects, and when it's cold, you can't raise crops under the northern lights. Below ground are riches such as oil and gas, diamonds and gold. Likewise, there are deep layers of peat beneath the wetlands that give the Boreal the nickname "the Fort Knox of Carbon." The Boreal is a vault that sucks carbon from the air and tucks it away in tree trunks and peat bogs, hanging on to it instead of spewing ever greater amounts of planet-warming carbon dioxide into the atmosphere.

Hiss provides several examples of methods to save our animals. Let me provide two of them. First, when there are a lot of caribou, more wolves can feed, but then the increase in wolves reduces the number of caribou to the point where the wolves themselves die back precipitously. After that, over a 20 to 30 year period, the cycle repeats. By 1973, when wolves became one of the first species protected by the new Endangered Species Act, there were fewer than 800 in the lower 48, all of them in the upper Midwest, just below Canada. Today the upper Rocky Mountains, meaning Montana and Idaho, are considered a wolf-rich area, and gray wolves are spreading west and then south into Washington, Oregon, and California.

Large carnivores are an excellent lens for looking at landscapes. Their movements and migrations expose broad corridors that already exist. Hiding the highway from the animals meant tunneling for many culverts with walkways, putting up miles of fencing so the animals cannot dart across the road, and building half a dozen dirt-and-tree-covered overpasses.

A second example is a longleaf pine forest which once covered 90 million acres, or about 60 percent of a virtually continuous 1,200-mile stretch across nine states from Virginia to Texas. That forest has been reduced by 97 percent, and there are only about three million acres left, which is more catastrophic than what's happened to the Amazon rainforest (over 20 percent lost), or to coral reefs (30 to 50 percent destroyed). The longleaf pine forest's "Big Cut" began after the Civil War. If you were going to save Florida black bears, it was clear, you'd have to save longleaf forests, one of their habitats. This process is in the works now.

According to the World Bank, North America is less than 15 percent protected; the goal is 50 percent over the next 30 years. His campaign slogan of *50 by '50* can move ahead without crowding or displacing or confining anybody because human activities (cities, suburbs, farms, mines, and all the rest) so far account for less than 40 percent of the American continent. At heart it comes down to how to share the earth with other species, and how much of the landscape is *not* to change.

So, what do you think? Will Hiss's slogan *50 by '50*, come true?

Purchase this book at www.amazon.com/Rescuing-Planet-Protecting-Half-Earth/dp/052565481X

About the Reviewer

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14 Errors Revolving Around Galileo, and How to Clear Them Up

The Catholic Church has always been open to science.

by Angelo Stagnaro

Few lies so excite secular souls as the Galileo Incident. But the historical reality of the situation is so completely different than [sic] the popular version of the story as to make one think we were discussing two different Galileos. Instead of proof the Church is anti-science, it serves to prove the opposite and shows that the Church supports science when it's governed by true scholarship, logical standards and scientific methodologies.

Atheists must harp on about the Galileo Incident because there are no other examples of the Church supposedly putting itself up in opposition to science. There are, however, plenty of examples of atheists putting themselves against science and reality, includ-

Continues on page 11

ing Albert Einstein and Fred Hoyle, who both attacked Father Georges Lemaître's Big Bang theory. Which is worse? Atheists decrying science or the Catholic Church asking Galileo to amend his reports?

In his book *God Is Not Great*, Chris Hitchens writes, "The attitude of religion to medicine, like the attitude of religion to science, is always problematic and very often necessarily hostile." He adds that medical research only began to flourish once "the priests had been elbowed aside." This is a blatant demagogic lie meant to rally passions rather than teaching truth. Hitchens was a brilliant writer but he just simply never understood anything about the subjects of which he wrote, relying upon his feelings and manipulating those of others rather than actually researching his facts. Hitchens' nonsense has more in common with Catholic comedian Stephen Colbert's "truthiness" than it has with actual truth.

Rather than being an obstacle to science, the Catholic Church created the only cultural environment in human history in which science could take root. Sociologist Rodney Stark explained this clearly in his *For the Glory of God: How Monotheism Led to Reformations, Science, Witch-Hunts and the End of Slavery*. In his book, Stark describes the "still-born" science in the great civilizations of the ancient and medieval world — except, of course, in Christian civilization, where science began to grow and thrive. History proves this. Empirical science and the scientific method were developed in Christian Europe and not in medieval or ancient China, India, Mesoamerica, Arabia, Japan, Greece or Rome. All of the sciences owe a great deal to the contributions of the Catholic Church and its faithful. J.L. Heilbron of the University of California-Berkeley admits this, specifically discussing astronomy:

"The Roman Catholic Church gave more financial aid and social support to the study of astronomy for over six centuries, from the recovery of ancient learning during the late Middle Ages into the Enlightenment, than any other, and, probably, all other, institutions."

Hitchens' statement, "The right to look through telescopes and speculate about the result was obstructed by the Church," is either proof of his aliteracy or sign of something by far more nefarious — an intentional, disingenuous lie meant to rewrite history for dangerous demagogic reasons. This accusation shouldn't surprise anyone as most people recognize that Hitchens wrote with "passion" rather than realistic accuracy.

This caricature simply has no relationship to historical reality. Christianity isn't anti-science. Rather it's anti- scientism — the unfortunate worship of a tool pretending it's a worldview. The absolutist, dogmatic reading of science has failed repeatedly in the past, and yet secularists refuse to learn from their past mistakes. To be clear, the most important questions asked by human beings fall outside the purview of science: What is goodness? What is justice? What is morality? What is the meaning of life? How should we deal with and understand the Creator of the Universe?

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The imaginary "faith-science divide" originates not with believers, but with atheists hoping to disparage the Church. It's neither suggested in the Bible nor in the *Catechism of the Catholic Church*. Among the many lies concerning Galileo in which atheists revel are: *

1. Galileo wasn't the first scholar to theorize about the heliocentric model of the solar system. Galileo used the notes that Nicholas Copernicus wrote nearly a century earlier, which were easily available. Actually, 10 years before the Galileo Incident, Johannes Kepler ran afoul of his fellow Protestants for his heliocentric views and found a welcome reception among some Jesuit scholars who were known for their scientific achievements.

2. Galileo was told he could discuss the hypothesis of heliocentrism but not advocate for the theory. Specifically, he was allowed to offer evidence for and against it but he couldn't claim it was more than a hypothesis.

3. The purpose of Galileo's trial wasn't to silence him but rather to make sure he admitted in his research that his heliocentric hypothesis was a theory and not fact. He had previously promised to do so but reneged on that promise. He had promised to not advocate the theory, but he was allowed to discuss the pros and cons of it.

4. Galileo was never tortured. When he was found guilty, he was placed under very comfortable house arrest equipped with a huge library and servants. He

Continues on page 12

could receive any number of visitors and could correspond with any of them.

5. Catholics take the Bible literally, but not *literalistically*. The Scriptures use metaphor and poetry. In the Song of Songs, God is described as riding a horse and knocking down castle doors with the pommel of his sword. This is not mean [sic] to be taken literally. Doing so would actually be blasphemy, as the true meaning of Scriptures would be sacrificed on the more selfish, literalist altar.

6. In actually, [sic] many Church prelates supported Galileo. In fact, when Cardinal Baronius defended Galileo, he was quoted as saying, "The Bible tells us how to go to Heaven; it doesn't tell us how the heavens go."

7. Geocentrism has never been a Catholic dogma.

8. The Church has never asked the faithful to choose between faith and science. In fact, most, if not all, of the modern sciences were instituted by Catholic priests and bishops and/or by Catholic faithful.

9. Nicholas Copernicus (1473-1543), a Polish Catholic priest, developed the heliocentric theory. He was encouraged by fellow Catholics, mostly priests, to publish his ideas, but he hesitated, not because of pressure from the Catholic Church, but rather because of fellow scientists who disagreed with him. In actuality, the Catholic Church had no problems with heliocentrism — it was Protestants who were hostile to the idea. In addition, the Thirty Years' War, the last of the religious wars resulting from the Reformation, was in full swing and this made scientific promulgations politically sensitive.

10. Though it's true that Copernicus' book was put on the prohibited book index by some bishops, it was done only until ten sentences in the manuscript were corrected. The book stated that heliocentrism was a fact rather than a theory. We shouldn't see this event through the lens of the present (i.e., presentism) because heliocentrism wasn't proven until 200 years later. It's not a scientific fact until it's proven — until that point, it's only conjecture.

11. In 1623, Galileo had a friend who later would become Pope Urban VIII. He encouraged Galileo to write a new book posing points both for and against the theory. The book was entitled *The Dialogue on The Two Great World Systems*.

12. Galileo was tried in 1633 for disobeying the injunction placed on him. Some cardinals defended him while others wanted to throw (his own) book at him. He was found guilty and placed under house arrest and there he wrote what some consider his best work, *The Discourse on The Two New Sciences* (1638). He died in 1643 at age 78, a venerable age even in the 17th century.

13. By all accounts, Galileo was a good Catholic and intended no wrong. His daughter chose to become a nun. However, he was stubborn, fiercely independent and not particularly kind to his friends. When Pope Urban VIII encouraged Galileo to write *The Dialogue*, he offered an argument for him to use in the book. Galileo included it but created a foolish simpleton character named Simplicio who offered the argument in the book. Instead of being kind to his old friend who was defending him, Galileo chose to burn that bridge and insult him — not a very clever or kind thing to do. It's odd that atheists remember Galileo's punishment, albeit incorrectly, but have no idea that Galileo threw his friend, the Pope, under the bus.

14. Considering that Galileo lied, broke his promises, insulted his scientific colleagues and the Pope and destroyed a very good friendship, the court treated him with the greatest respect and gentility.

The Church has always been open to science and has made many real contributions to scientific progress.

The Church shouldn't have put Galileo on trial, but it acknowledges that. Neither Copernicus' nor Kepler's nor Galileo's books should have been banned. The Galileo Incident was an unfortunate situation which Galileo only made worse. But, it was an isolated occurrence and absolutely not indicative of an anti-scientific or anti-intellectual pattern on the Church's part. This is easily proven because our opponents can't name another similar situation. The Church has always been open to science and has made many real contributions to scientific progress.

* *Editor's note: These, in fact, are not lies, but reality.*

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