

An ETI Myth in the Heart of Science?

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Abstract. Astrobiology and related space sciences typically filter facts through an interpretive sieve, a conceptual set which might be called a *myth*, actually the *ETI Myth*. This myth presupposes that evolution is progressive, that progress leads to science, and science has redemptive if not salvific power. Such a conceptual set should be demythicized by both the scientist and the theologian. The interaction between the theologian and the scientist should take the following form: the theologian asks the scientist to perform the best science. Science at its best recognizes what is known, what can be known, and what the limits of such knowledge are.

Key Terms. astrobiology, astrotheology, science, evolution, progress, myth, demythicizing, Paul Davies, Eric Voegelin



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"If number is the language of science, myth is the language of religion."
- Huston Smith¹

"The cosmic perspective is spiritual--even redemptive--but not religious."
- Niel DeGrasse Tyson²

When outer space gets into the human soul, it explodes like a hand grenade. Psychic and cultural shrapnel fly every which way. The task of science is to control, direct, and focus this exploding energy. This scientific attempt to channel an otherwise chaotic energy field into a narrow groove of empirical reasoning can be, at best, only partially successful. Rushing intellectual excitement spills over, flowing outside the rational channel into the fertile gardens of myth, speculation, and hope.

Deep within the human soul an agonized voice screams inaudibly for grace, for redemption, for salvation. Can the heavens bring it? Can what lies beyond the heavens deliver it? Can the infinite calm the restlessness of our finite anxieties?

Singing to the human soul is the voice of the astrobiologist, accompanied by a chorus of other space sciences such as astronomy, astrophysics, spectroscopy, physical cosmology, and others. We expect scientific lyrics to limit themselves to facts. But when accompanied by the music of the celestial spheres, these facts take on a rhythm that resonates with the power of myth.

Did I say "myth"? Yes, indeed.

Scientific songs sung about what lies out there in space are a composition of empirical data, hype to persuade funders, and myth.

¹ Huston Smith, *Why Religion Matters: The Fate of the Human Spirit in an Age of Disbelief* (San Francisco: Harper, 2001) 30.

² Neil DeGrasse Tyson, *Space Chronicles: Facing the Ultimate Frontier* (New York: W.W. Norton, 2012) 260.

Yes, myth. By no means does this make astrobiology or related fields less than scientific! To be sure, we can trust the data-gatherers. Nevertheless, the worldview or horizon that accompanies the vision of the ETI sleuth is inspired by myth. If we would liken current theories about extraterrestrial life to a line of lyrics, myth is the melody that links the words with the rhythms of our soul and enthrall us with what science says about other worlds hiding behind our sky.

In what follows I will use the hermeneutic of secular experience to reverse engineer this song of space. How? I will begin by looking at some definitions of *myth*.³ Myth has accompanied the evolution of the human race for as long as we have records, and it has not abandoned our consciousness even in the modern scientific age. I will combine elements from multiple understandings of myth, trying each one on for size to see if it fits the current scientific paradigm. The definition that fits is this: a myth is a conceptual set which, like a sieve, filters data and organizes it into a meaningful promise for the future.

With this definition in hand, I will show how astrobiology and related space sciences typically filter facts through such a conceptual set. What I dub the *ETI Myth* presupposes that evolution is progressive, that progress leads to science, and science has redemptive if not salvific power. Such a conceptual set should be demythicized by both the scientist and the theologian. The interaction between the theologian and the scientist should take the following form: the theologian asks the scientist to perform the best science. Science at its best recognizes what is known, what can be known, and what the limits of such knowledge are.

Finally, I will advocate *astrotheology*. The licensed theologian--the astrotheologian--will ask the scientist to work as a scientist, and

³ "Myths to us, then, are not just ancient and thus untrue fables; rather, they signify a certain perennial mode of language, whose elements are multivalent symbols, whose referent is in some strange way the transcendent or the sacred, and whose meanings concern the ultimate or existential issues of actual life and the questions of human and historical destiny." Langdon Gilkey, *Religion and the Scientific Future* (New York: Harper, 1970) 66.

not use science to construct a mythical worldview or, worse, a substitute religion. I do not believe that scientists should practice theology without a license. I ask for a clean science, a demythicized science.

Remind me again: what is myth?

Of the many definitions of myth, I like three. According to the first definition, a myth is a story or a belief that is false. To bust such a myth, the false story or false belief should get discredited. This is the definition of myth used by *Astronomy* magazine. Here, myths are said to be false stories about what goes on in space. The magazine attempts to tell the truth to dispel such myths. "Many fallacies exist about astronomy. Here's the truth, courtesy of *Astronomy* magazine," *Astronomy* tells its readers.⁴ Theologians like scientists bust such myths. Jesuit Bernard Lonergan relies on this same definition too. "Myth is a narrative about entities not to be found within an empiricist, an idealist, a historicist, an existentialist horizon."⁵ Both scientists and theologians debunk myths that are false stories.

The second definition is the one used by scholars in the history of religions. A myth is a story of origin. A myth is a story about how the gods created the world or a part of the world in the beginning, *in illo tempore* or the time before time began, which explains why things are the way they are today.⁶ Ancient myths seem quaint, ol'

⁴ *Astronomy*, <http://www.astronomy.com/News-Observing/Astronomy%20Myths.aspx>, accessed 7/13, 2013.

⁵ Bernard Lonergan, S.J., *Method in Theology* (New York: Herder and Herder, 1972) 239.

⁶ This definition reflects the life-long scholarship of phenomenologist, Mircea Eliade. See: Mircea Eliade, *The Sacred and the Profane* (New York: Harcourt, Brace, and World, 1959). Philosopher Paul Ricoeur helps us see that the myth is closer to raw experience than the rationalizations that interpret the myth. "Myth...not a false explanation by means of images and fables, but a traditional narration which relates to events that happened at the beginning of time and which has the purpose of providing grounds for the ritual actions of men of today and...establishing all the forms of action and thought by which man understands himself in his world...Paradoxical as it may seem, the myth, when it is thus demythologized through contact with scientific history and elevated to the dignity of a symbol, is a dimension of modern thought." *The Symbolism of Evil* (Boston: Beacon Press, 1967) 5.

fashioned, or out of date in our modern world. But, such myths once provided a powerful glue that held culture together because they gave expression to existential meaning and cosmic purpose. To bust ancient myths of origin I recommend the method of demythologizing. When we demythologize we keep the myth, but we interpret the myth to reveal its existential meaning and its embedded understanding of cosmic reality. Keep the myth but interpret it.

A third definition goes like this: *a myth is a thought structure, a set of conceptual assumptions about reality that frames and filters the cultural reception of new experience, including new scientific knowledge.*⁷ Computer hero Ray Kurzweil comes close to recognizing what hermeneutical philosophers have been telling us for a century: "our conscious experience of our perceptions is actually changed by our interpretations."⁸ With this third definition of myth, we are looking at the way that our perceptions are influenced by our interpretations. Further, we recognize how our interpretations are in turn influenced by the conceptual frameworks through which we filter our perceptions. Jewish mystic Daniel Matt helps us grasp this subtle dimension of myth. "A myth is a story, imagined or true, that helps us make sense of reality....Without a myth, there is no meaning or

⁷ The conceptual set which frames scientific discourse looks like a model, but it is not tested as one would test a hypothesis. As a myth, the conceptual set functions more like a model comprehending the experimental models which actually do get tested. Is there a counterpart in religion. Yes. Religious myths provide the symbolic discourse out of which rational discourse is drawn. If the myth takes narrative form, the religious model takes rational form, the latter being derivative from the former. "But religious models can also fulfil many of the *non-cognitive* functions of myth," comments Ian Barbour, "particularly in *the expression of attitudes*; these functions have no parallel in science. Models embodied in myths evoke commitment to ethical norms and policies of action. Like metaphors, religious models elicit emotional and valuational responses. Like parables, they encourage decision and personal involvement. Like myths, they offer ways of life and patterns of behaviour." Ian G. Barbour, *Myths, Models, and Paradigms: A Comparative Study in Science and Religion* (New York: Harper, 1974) 28. Extracting the model from the myth through critical self-reflection is part of the theologian's task of demythicizing, whether with a scientific myth or a religious myth.

⁸ Ray Kurzweil, *How to Create a Mind: The Secret of Human Thought Revealed* (New York: Viking, 2012) 31.

purpose to life. Myths do more than explain. They guide mental processes, conditioning how we think, even how we perceive."⁹

Many conceptual sets which play the role of myth in human thinking have a tripartite structure. A spatial tripartite structure undergirds the worldview of the Bible and much of ancient literature. Here, the cosmos places heaven upstairs, hell downstairs, and the Earth's surface in between. In complementary fashion, the temporal tripartite structure of the Bible divides history into three chapters: creation, fall, and redemption. Whether spatial or temporal, the tripartite conceptual set places the present generation of humanity in the middle. For redemption, we need to go either up to heaven or toward the redemptive future. This is not the message of the Bible per se; it is the conceptual set within which the Bible's message is placed. Such a tripartite structure provides the conceptual set which counts as myth; it filters data and experience in a way that give purpose to the cosmos and meaning to our individual lives.

Of the three alternative definitions, contemporary space scientists work most frequently with conceptual set, a horizontal myth of redemption. I call it the *ETI Myth*. This myth takes the form of an evolutionary myth of progress, a story which scientists export from Earth to imaginary planets in outer space. This myth is an unscientific story that mimics a particular form of ancient myth, namely, the gnostic redeemer myth. Myth feels right at home in the heart of science, even if it is an unacknowledged interloper.

With these helpful definitions of myth in hand, I will turn to the current paradigm that frames the explorations of astrobiologists, SETI, and even the wider culture. With a little dissection we will be able to discriminate between what counts as facts and the myth that links the facts together. Mythical thinking is by no means a sin, in my opinion; nor should it be expunged entirely from science. Yet, for the sake of

⁹ Daniel C. Matt, *God and the Big Bang: Discovering Harmony between Science and Spirituality* (Woodstock VT: Jewish Lights Publishing, 2nd ed., 2016) 14.

honesty in epistemology, I recommend that myth be labeled as myth and not smuggled into a theory disguised as established knowledge.

I intend to demythicize science. I believe a demythicized science will be more honest and more valuable to the theologian than the current myth-infested conceptual set that directs and energizes much of the search for ETI. In fact, a demythicized science might even be more valuable to science itself, because it might avoid sounding dissonant notes in scientific and theological ears.

Color me a pretty galaxy, Mister Astronomer!

Facts are not enough. When a space scientist sings about the cosmos, the lyrics must be put to a catchy tune. The chorus of the space scientist's song bears this message: beyond the data, the numbers, and the dizzying array of facts, we cannot help but hope that somewhere in the stars lies our destiny.



Whirlpool Galaxy. Hubble Telescope.

Let me begin with an example of the way in which the myth as conceptual set influences what we see in our minds. When we look at the Hubble Telescope photograph of the Whirlpool Galaxy, our eyes precipitate in us an aesthetic moment. The familiar whirlpool shape

spinning like a pinwheel throws off bright blues and reds. The splendor of this celestial wheel connotes the depth and majesty and beauty of the natural world to which we belong. A sense of gratitude wells up within us, thanking our scientists for making this revelation possible for us. Should a collection plate be passed in front of us, we would surely dig into our pockets to make a financial contribution to support the priestly mediators who bestow on us these heavenly truths.

Let us pause for a moment and ask: are we looking at brute empirical data? Do the Hubble pictures pass on to us exactly what the astronomers are seeing? Not exactly. The photos are touched up, so to speak. Or perhaps more to the point, they are photoshopped.¹⁰ "The appearance of the Hubble images depends on the choices of astronomers who assigned colors, adjusted contrast, and composed the images. Although attentive to the data that lie behind the images, through their decisions astronomers encourage a particular way of seeing the cosmos."¹¹ A particular way of seeing the cosmos? Just how do the Hubble photoshoppers want us to see the cosmos?

What I want to point out here is that a scientific explanation--in this case a visual explanation--includes a layer of interpretation that may be carefully designed to elicit in us a specific meaning. Or, to say it differently, a scientific explanation might be programmed to tantalize religious or spiritual sensibilities. Or, to say it still differently, a scientific explanation might be tinged with persuasive add-ons. The line between a scientific explanation and propaganda might be a blurry one, blurred by startling bright colors.

The observational data for the Whirlpool Galaxy required six separate pointings of the telescope leading to ninety-six separate exposures. These had to be assembled, so to speak, and then

¹⁰ Travis A. Rector, Kimberly Arcand, and Megan Watzke, *Coloring the Universe* (Fairbanks AL: University of Alaska Press, 2015) 168; 191.

¹¹ Elisabeth Kessler, "The Astronomical Sublime," *The University of Chicago Magazine* 105:4 (Mar-Apr 2013) 56-62: 59.

photoshopped to create a single image. According to what conceptual set were the data assembled, organized, and consolidated before getting a paint job? What extra-scientific principle guided the artistic re-presentation of the raw data? According to Elisabeth Kessler, "the mythos of the American frontier functioned as the framework through which a new frontier was seen."¹² That is to say, when we look at the Whirlpool Galaxy we are prompted to think: "this is America's new frontier. Let's ask Congress to increase NASA's budget."

Let us pause a moment to imagine what might happen if we give the crayons to astronomers in other countries. Which mythos might they express? Astronomers in the land of the rising sun might color Hubble's Black Eye Galaxy M64 to appear like *Ocha*, the Japanese tea ceremony. Italian sky watchers might paint the Spiral Galaxy M106 to look like a pepperoni pizza. We would expect German scientists to see in the Orion Nebula the amber beer that induces October *Gemütlichkeit*. No doubt we will all anticipate what might happen when the French space agency, *Centre National d'Etudes Spatiales* or CNES, takes charge of Hubble's photos. Might the Spiral Galaxy M74 then remind us of bubbling Champagne, and the Carina Nebula appear as a fountain of Bordeaux Cabernet Sauvignon?

I have noted how our spiritual strings get twanged when our eyes view the starry night sky; outer space calls to us from within our soul. The Hubble photo artists intuitively understand this spiritual sensibility. "The Hubble images evoke an experience of the sublime as they allude to the landscapes of the American West."¹³ Outer space is the new West, the wild frontier just waiting for us to tame. When taming the first western frontier colonial Europeans built railroads, sequestered Amerindians, decimated the bison population, and

¹² Ibid., 60.

¹³ Ibid., 62.

established a united United States. Like the wild West, is outer space calling up our Promethean impulses to come, see, and conquer?

If Hubble artists did not begin with the *mythos* of the American West, they would have begun with another myth. It is difficult to find science without myth, even if many of us are reluctant to admit this fact. In what follows, I will identify the conceptual screens through which astrobiologists and other space scientists filter their data.

I believe the systematic theologian who would become an astrothologian should analyze and critique the space sciences from within, exposing extra-scientific assumptions and interpreting the larger value of the scientific enterprise. Although I respect and honor scientists for what they know and for what they promise, scientific claims should not be given a free pass. Scientific claims should be subjected to critical review by religious thinkers. In this case, my task will be to engage in a bit of demythicizing.¹⁴

The Gnostic Redeemer Myth: A Spatial & Temporal Tripartite Conceptual Set

Filtering data about outer space through a conceptual set connoting America's wild West hints that myth might be at work here. As we proceed, I will suggest that a specific ancient myth is being revived by contemporary space science, but in a disguised form. I nominate the gnostic redeemer myth. The frontier connotation reincarnates the redemption phase of gnostic redemption. Let me retell the story of the ancient story and then demonstrate how it endures in contemporary science.

The term, *gnosis*, is Greek for knowledge. It refers to special knowledge of invisible realities, especially the path from the darkness of life in the flesh to enlightened life in the spirit above. "Gnosis...is a product of Hellenistic syncretism, that is the mingling of Greek and

¹⁴ Here I add the task of demythicizing to a previous theologian's to-do list in an earlier treatment. Ted Peters, "Astrotheology and the ETI Myth," *Theology and Science* 7:1 (2009) 3-29.

Oriental traditions and ideas subsequent to the conquests of Alexander the Great."¹⁵ According to the story of origin in this myth, ultimate reality belongs to the unknown divine, bathed in eternal light. Due to a mistake performed by a lesser god, the demiurge, the physical world gets created. Creatures within the physical world can no longer see the glorious light of the divine source of reality. The physical realm is less real than the realm of the spirit. We human beings would be totally lost except for one thing: buried within our bodies is a divine spark, an ember of the divine fire that lights up heaven above. Despite our darkness, the divine spark lies hidden within each one of us. Fortunately, according to the myth, a redeemer from above comes into the realm of darkness to teach us who we really are--that is, to teach us to fan the spark into a vigorous flame that rises upward, upward from the realm of flesh into the realm of spirit. If we rise beyond the seven heavens, we will enter the eternal realm of light and there dwell with the divine. Or, to put it another way, we ourselves are already divine but we need gnostic knowledge to realize the divinity that lies hidden within us.

Note the three stage movement: first, from light above to darkness below; second, the struggle to discover the light within the darkness; and, third, the ascent from darkness to the light above. This three story worldview presumes a hierarchy of principles, according to which the lower always derive from the higher but are less than the higher. Temporal passage in the physical world amounts to a devolution, accompanied by a hope of redemption through knowledge.¹⁶

This gnostic myth was growing in influence just prior to New Testament times; and in the early centuries of the Christian church it sought a syncretism with Christian belief. Some variants of the myth

¹⁵ Kurt Rudolph, *Gnosis*, tr. Robert McLachlan Wilson (San Francisco: Harper, 1983) 54.

¹⁶ See: Hans Jonas, *The Gnostic Religion: The Message of the Alien God and the Beginnings of Christianity* (Boston: Beacon Press, 1963) and Ioan P. Couliano, *The Tree of Gnosis: Gnostic Mythology from Early Christianity to Modern Nihilism*, tr. H.S. Wiesner (San Francisco: Harper, 1990) 55.

dub Jesus as the gnostic redeemer. The Gospel of John repudiates this myth by affirming that in Christ God becomes incarnate, that God actually loves the physical world. No self-respecting ancient gnostic could accept that the sublime divine could take on flesh and live in the darkness. Still, even though orthodox Christian belief in the incarnation became the horse prancing through the centuries, the gnostic variant has ridden this horse right down to the present era. Gnosticism keeps reappearing like children on Halloween, in multiple costumes. The costume gnosticism wears today includes an affirmation of the physical, but redemption through knowledge is difficult to disguise.

The ETI myth includes hope of redemption or salvation for us on planet Earth. That redemption will come from the sky, from outer space behind the sky. A close look will show that the means of salvation resembles significantly what we find in the ancient gnostic redeemer myth.

Historicizing the three stage gnostic myth

Reality is historical. That's a decisive contribution of ancient Israel to the modern mind. If the gnostic redeemer myth is to survive, it must wear a historical mask. Like a tree with a vine winding around its trunk, the biblical tradition with a gnostic vine has entered the modern psyche at the presuppositional level. Demythologizing begins with analysis, with identifying the myth as myth.

Here's the three part history presupposed by the modern myth: (1) paradise, (2) fall from paradise, (3) new age or second paradise. When influenced by the theory of progressive evolution, the three stages look like this: (1) premodern infancy in darkness; (2) where we are now: modern adolescence with a spark of light; and (3) future redemption by highly enlightened science.

Because the New Testament promise of the future kingdom of God has reverberated through the centuries of Western culture, the earlier vertical gnostic myth has also morphed into a horizontal myth of eras or epochs or ages. Whether we are religious or secular, we today look forward to a coming new age, to an eschatological salvation. This is the case whether this promised new age is brought by God or by human progress. In its secular form, this horizontal myth pumps the lifeblood into much of what we know today as modern science.

For an exposition of this historicized myth, we turn to philosopher Eric Voegelin. Voegelin began his career as a professor at the University of Vienna. When the Nazis rose to power in his native Austria, this university professor suffered from their restrictive measures. He fled to the United States where he later taught at the University of Chicago and then Stanford University. His first hand experience with totalitarian ideology provided a laboratory for experimenting with his hypotheses about human nature. His key observation is that "the myth is created purposely to bind the masses emotionally and to arouse in them the politically effective expectation of salvation."¹⁷ Just how does this work?

According to Voegelin's reading of Western culture, the tripartite philosophy of history comes to paradigmatic expression in the twelfth century with Joachim de Fiore. In medieval Florence, Joachim proffered a chiliastic or millennialist picture of the world's history. Using a trinitarian model, Joachim saw stage one as the age of the Father and stage two as the age of the Son. We are on the brink of stage three, the age of the Holy Spirit, Joachim prophesied. What has happened here is that the vertical worldview in gnosticism and the New Testament has been tipped on its side; so now we look for heaven not upstairs but rather in the future. And the prophet who

¹⁷ Eric Voegelin, "The Political Religions," in *The Collected Works of Eric Voegelin*, 34 Volumes (Baton Rouge LA and London: Louisiana State University Press, 1990-1995) 5:62.

places himself or herself on the doorstep to this future realm becomes a special person, the bringer of salvation, so to speak. Like so many apocalyptic alerts in our past, Joachim's did not come to fulfillment.

Voegelin's take is that such an attempt to control history through myth commits a gargantuan fallacy, namely, the fallacy of immanentizing the transcendent. Such a myth attempts to take the promised future of God's kingdom and place it within a de-divinized history, to rescue history from the vicissitudes of boring one-after-the-otherness. Voegelin's vocabulary here invokes terms such as *gnostic* and *demonic* to refer to the sad result. By *gnostic* he refers to the self-congratulatory assumption that our generation possess knowledge of essential reality; and by *demonic* Voegelin indicates that such self-congratulatory assumptions lead to arrogance, superiority, and violence.

The very concept of the *modern age* is a secularized myth, a gnostic myth of history in three stages: stage one is ancient Greece and stage three is modern science. What is stage two? The middle is age of religion, the fall of the rational light into the realm of superstitious darkness. Please do not overlook this point: the very concept of the modern age is itself a myth, a horizontal myth.

Alfred North Whitehead identifies stages one and three in the horizontal myth whereby the modern world defines itself. "Greece was the mother of Europe; and it is to Greece that we must look in order to find the origin of our modern ideas."¹⁸ Modern science does two things: it rescues the previous light of knowledge from the domain of darkness within which it is imprisoned, and it leads us forward to new achievements in enlightenment. The ancient Greek light fell into the darkness of Christianity; but modern science has revived the buried light and is now fanning the flames on enlightenment.

¹⁸ Alfred North Whitehead, *Science and the Modern World* (Cambridge UK: Cambridge University Press, 1953) 8.

According to the horizontal myth, modern scientific knowledge saves us from the darkness of the middle ages, from the age of religious superstition. The Christian period between Greek philosophy and European science is re-named, the "dark ages." Dark ages? Really? One cannot imagine a twelfth century intellectual running around Italy's Florence complaining, "Oh, I feel so miserable because I live in a dark age." The name "dark ages," which stands in the middle between stage one, enlightened Greece, and stage three, enlightened Europe, could only be invented by someone who deems his or her age to be the third in the sequence, the age of light. "The conception of a modern age succeeding the Middle Ages is itself one of the symbols created by the gnostic movement. It belongs in the class of the Third Realm symbols."¹⁹ Crane Brinton draws a picture of the Enlightenment that emphasizes the turn away from Christian belief and toward modern rationalism. The concept of Enlightenment proffers "*the belief that all human beings can attain here on this earth a state of perfection hitherto in the West thought to be possible only for Christians in a state of grace.*"²⁰

In short, the very concept of the modern age in which we live is itself mythical. This is an important background point: we in our scientific age live within a worldview produced by a horizontal myth of history, a myth that tells us we have progressed beyond religion toward increased reliance upon science. We must expect, then, that when we imagine life on other planets that this mythical framework will condition the images we paint of our extraterrestrial neighbors.

It is important to see how the effective history (*Wirkungsgeschichte*) of the temporal myth continues down to the present time, underlying and energizing the modern doctrine of progress. On the eve of the nineteenth century, philosopher Georg Wilhelm Friedrich Hegel proffered a tripartite mechanism: the fertile

¹⁹ Voegelin, "The New Science of Politics," in *Collected Works of Eric Voegelin*, 5:196.

²⁰ Crane Brinton, *Ideas and Men: The Story of Western Thought* (Englewood Cliffs NJ: Prentice-Hall, 2nd ed., 1963) 289, Brinton's italics.

interaction of thesis, antithesis, and synthesis. This, Hegel said, led to the absolute idea. Later, Karl Marx turned this upside down, so that history would be driven not by an ideational force but rather by materialistic forces: the three stage class struggle between the proletarian workers, the bourgeois managers, and after the coming communist revolution the classless society. Both Hegel and Marx re-divinized history by immanentizing the transcendent Kingdom of God. They turned salvation into the next stage of human history. Whether gradually through progress or convulsively through revolution, the perfect idea or the perfect society belongs to us, here in this secular world.

In the twentieth century, the horizontal myth re-emerged in Germany. The Nazi period relied upon the symbol of the Third Reich, a one thousand year period of Aryan dominance and prosperity. The prior two ages of German hegemony were thought to be the age of Charlemagne (German: *Karl der Große*), who established the Carolingian Empire and ruled from 768 to 814. The second was the age of the Prussian Hohenzollern dynasty, 1871-1918. Adolf Hitler got the idea of a third age from Arthur Moeller van den Bruck, who in 1922, wrote the book, *Das Dritte Reich*. Bruck envisioned the rise of an anti-liberal, anti-Marxist Germanic Empire in which all social class divisions would be reconciled in national unity under a charismatic *Führer* (leader). Hitler assumed the title of *der Führer* and sought to usher in the new age. The result was the greatest calamity in the history of the world to that date, World War Two.

It is Voegelin's opinion that the tripartite myth of history is the product of the re-divinization of history, the attempt to murder the transcendent God whom we know in spirit, and to replace this God with faith in materialistic progress. "The death of the spirit is the price of progress....This gnostic murder is constantly committed by the men who sacrifice God to civilization. The more fervently all human energies are thrown into the great enterprise of salvation

through world-immanent action, the farther the human beings who engage in this enterprise move away from the life of the spirit. And since the life of the spirit is the source of order in man and society, the very success of a gnostic civilization is the cause of its decline."²¹ Voegelin is by no means neutral: this kind of gnostic myth is destructive, in his judgment.

In sum, if we understand myth as a horizontal worldview with a history that is leading progressively by our own hand toward a salvation in the future, we risk elevating ourselves into the rank of the prophets of that future. The immanentizing of God's transcendent salvation becomes dangerous, demonic and destructive.

I believe that God's promise for the healing of the world in the new creation is something that should inspire our trust in the divine plan. Yet, I deny the immanentization of this future vision; and I deny the commissioning of natural scientists to make happen what only God can make happen. "Any attempt to attain heavenly bliss by our own efforts is doomed to failure," writes Hans Schwarz; "In this respect we can only appeal to God's mercy."²² To get clear on this, I advocate demythicizing the gnostic myth at work in the natural sciences.

Our Modern Myth: Progress

Perhaps you as a reader are becoming a little impatient. Here we are, warming up in the bull pen, pitching various definitions and tracing the history of western civilization. When will we get into the game itself? When will we get to the ETI myth?

Please be patient a bit longer. We need to introduce, even if briefly, the modern concept of progress. The idea of progress "means that civilization has moved, is moving, and will move in a desirable

²¹ Voegelin, 5:195.

²² Hans Schwarz, *The Human Being* (Grand Rapids MI: William B. Eerdmans, 2013) 384.

direction."²³ This concept of progress has become a virtual doctrine espoused by the modern mind, a secular replacement for the traditional theological concept of divine providence. "Today everything is filled with the thought of development and of progress upward from the depths of darkness to unknown heights," wrote Ernst Troeltsch a century ago.²⁴ What role might the concept of progress play in current scientific thinking, especially as it relates to speculations about extraterrestrial life?

Here is what is relevant for our discussion: the worldview within which astrobiology and related sciences of space work is dominated by the theory of evolution accompanied by faith in progress. The core doctrine of this faith is that progress will bring redemption. This is not at all unexpected. What is important to us here is the question: does the theory of biological evolution with which today's scientists work include or exclude the doctrine of progress? If it includes faith in progress, then we might have to subject it to theological analysis, perhaps even demythicizing.

The concept of progress provides the water within which modern Western culture swims. It flooded Europe in the eighteenth century; and by the middle of the nineteenth century Western society was awash in speculations about progress and its meaning. The industrial revolution was changing the landscape; and democratic institutions were aggressively replacing monarchical rule. Capitalism was reshaping economic life, and many believed that the "invisible" hand of God was guiding the world toward increased unity and wealth.

As the concept of evolution entered public debate by the 1850s, Herbert Spencer connected progress in culture with progress in biology. The "law of organic progress is the law of all progress. Whether it be in the development of the Earth, in the development of

²³ J.B. Bury, *The Idea of Progress: An Inquiry Into Its Origins and Growth* (New York: Dover, 1932) 2.

²⁴ Ernst Troeltsch, *Protestantism and Progress: The Significance of Protestantism for the Rise of the Modern World* (Minneapolis: Fortress Press, 1912, 1986) 27.

Life upon its surface, in the development of Society, of Government, of Manufacturers, of Commerce, of Language, Literature, Science, Art, this same evolution of the simple into the complex, through successive differentiations, holds throughout."²⁵ The cultural notion of progress became biologized and scientized and philosophized.

What about Charles Darwin? For the most part, Darwin was ambivalent about the idea of progress. The doctrine of progress belonged to culture, not to biology, he thought. Could he import progress into his interpretation of the story of life's evolution? In the first edition of *Origin of Species* in 1859, he seems to concede that progress can be found in nature. "The inhabitants of each successive period in the world's history have beaten their predecessors in the race for life, and are, in so far, higher in the scale of nature; and this may account for that vague yet ill-defined sentiment, felt by many paleontologists, that organization on the whole has progressed."²⁶ In Darwin's later publications, he imbibed the nectar of progress more deeply. He found he could rank the various human races as more or less evolved. Not unexpectedly, he found white European capitalist males as the most highly developed among the human beings. But, we ask: was it necessary for Darwin to connect belief in progress with his evolutionary science?

Philosopher Michael Ruse surmises that the cultural pressures on Darwin's scientific judgment were strong, perhaps even irresistible. "Progress was the philosophy of the day; Darwin was submerged in it; and the indications are that it seeped over--more precisely, flooded--into his science."²⁷ Ruse says even more forcefully. "Evolutionary thought is the child of Progress."²⁸

²⁵ Herbert Spencer, "Progress: Its Law and Cause", *Westminster Review* 67 (1857) 244-267; reprinted as "Transcendental Physiology" in *Essays: Scientific, Political, and Speculative* (London: Williams and Norgate, 1868) 2.

²⁶ Charles Darwin, *On the Origin of Species* (London: John Murray, 1859) 222.

²⁷ Michael Ruse, *Monad to Man: The Concept of Progress in Evolutionary Biology* (Cambridge MA: Harvard University Press, 1996) 158.

²⁸ *Ibid.*, 526.

In the wake of Spencer and Darwin in the late nineteenth century, evolutionary progress on Earth was shot like an intellectual canon ball toward other worlds in the sky. By analogy, other planets should develop life and evolve intelligence too. This export of Earth's biohistory to extraterrestrial realms expressed an important nineteenth century principle: uniformitarianism. Uniformitarianism is the belief that nature's laws operate the same everywhere in the universe. An "implicit uniformitarian principle extended to the other planets," observes Stéphane Tirard.²⁹ Utopianism was rife during this period; and the idea of progressive evolution paved the road to a utopian future.

However, in the twentieth century, as evolutionary theory matured as a science, researchers began to expunge the idea of progress from biological change. Why? Because it imparts a human value to an otherwise valueless interpretation of nature. Late twentieth century biologists sought to expel the doctrine of progress, at least insofar as it applies the large overall direction of evolution. Local advances in the complexity of organisms could be acknowledged, to be sure; but any thought of an internal teleology guiding the overall processes of nature had to be denied. Nature is valueless, directionless, designless.

The loss of purpose or direction followed three steps: step one: belief in divine providence; step two: the replacement of divine providence with secular progress; step three: the replacement of progress with valueless change.

During the premodern period, theologians saw divine providence operative within nature. At the beginning of the modern period, divine providence was replaced with progress--progress understood as providence minus the divine hand. Paul Davies tells the story this way. "There thus arose the notion of a ladder of

²⁹ Stéphane Tirard, "The Relationship Between the Origins of Life on Earth and the Possibility of Life on Other Planets: A Nineteenth Century Perspective," *Astrobiology, History, and Society*, 103-114: 111.

progress in biology, according to which life began as a primeval slime and slowly but inexorably advanced to organisms of greater and greater complexity and sophistication, leading ultimately to human beings. In this scheme we human beings occupy a position at the top of the ladder."³⁰ But, adds Davies, the bias against religion was so strong, that biologists felt the need to expunge even the doctrine of progress. Why? Because it looked like scientists might be sneaking design back into nature. So, for apparently anti-theological reasons, scientific method withdrew the search for purpose or teleology or design. "Having long ago cast God out of the Garden of Eden, biologists are reluctant to concede any suggestion of a guiding hand, even in the guise of a law of nature....Evolution stumbles onward, blindly and haphazardly, to wherever contingency takes it."³¹ What is so important to note here is that progress was recognized as a secularized variant of a previous religious doctrine, namely, providence. Neither providence nor progress can be visible to the scientist's eye. Over the century and a half since Darwin, numerous scientists have sought to perform surgery on the theory of evolution by amputating purpose, direction, or progress.

If this is the view of today's evolutionary biologists, then how do we account for what looks like progress in the popular idea of evolution? The new and popular answer: self-organization. Nature self-organizes. "Self-organization can occur."³² By referring to what looks like evolutionary progress in terms of self-organization, what we observe remains the same but the divine guiding hand of progress is conceptually removed. In the form of self-organization, nature gives us progress minus providence.

Terrence Deacon speaks for the current generation of biological researchers. "The idea of progress in evolution is an unnoticed habit

³⁰ Paul Davies, *Are We Alone? Implications of the Discovery of Extraterrestrial Life* (New York: Penguin Books, 1995) 50.

³¹ *Ibid.*, 51.

³² *Ibid.*

left over from a misinformed common sense, from seeing the world in terms of *design*. The problem is that our intuitive model for evolution is borrowed from the history of technological change, which has been a cumulative process, adding more and more tidbits of know-how to the growing mass of devices, practices, and records each day. In contrast, biological evolution is not additive, except in some very limited ways....Evolution is an irreversible process, a process of increasing diversification and distribution. Only in this sense does evolution exhibit a consistent direction.”³³ In sum, organic evolution does not express an inner directedness; nor can we expect the future of evolution to progress unendingly toward better and better life forms. To raise such an expectation would be to abandon science and embrace a cultural or ideological set of values. Evolution without progress is the dominant view among today's most sober evolutionary researchers.

As the scientific community became increasingly anti-religious, providence was rejected on behalf of progress and then progress itself was dumped completely from the theory of evolution. At least among our evolutionary biologists. But, what about astrobiologists? Might an astrobiologist wish to keep progress as a disguised form of divine providence?

Progress, or at least progress in the form of self-organization, has not been completely expunged from the assumptions made by astrobiologists, SETI researchers, and the wider culture. It is alive and well. “The idea of progress has typically advanced three claims: (1) there are no fundamental limits on the human capacity to grow, however growth is defined; (2) advancements in science and technology foster improvements in the moral and political character of humanity; and (3) there is an innate directionality in human society, rooted in societal, psychological, or biological

³³ Terrence W. Deacon, *The Symbolic Species: The Co-evolution of Language and the Brain* (New York: W.W. Norton, 1997) 29.

mechanisms.”³⁴ To what extent, if at all, might this understanding of progress embedded in a horizontal myth--the evolutionary worldview--affect the presuppositions and suppositions of the ETI sleuth? Davies' concept of biological determinism answers this question for us. With the term “biological determinism,” Davies means: “given the right conditions, life inevitably will form after a sufficiently long time, and once life gets started, it will very probably progress toward intelligence....Biological determinism is the prevailing philosophy at NASA, among SETI researchers, school children, journalists, and even the rich and famous.”³⁵ In short, even though the majority of established evolutionary biologists deny progress, astrobiologists along with their SETI friends and with the wider culture affirm progress and even providence in disguised form. Although evolutionary progress has been trashed on Earth, it has been recycled and enjoys a new life on off-Earth planets.

If we turn momentarily from the sciences to the humanities, the nix on progress is even stronger than among biologists. From the dawn of history, it appears that human beings have been the very human beings we witness every day in our communities. Our achievements and our tragedies today mimic entirely those of our ancestors. It would be a mistake to interpret the history of human nature according the model of scientific or technological progress. Philosopher Karl Jaspers presses this point. "There is progress in knowledge, in technology, in the prerequisites for new human possibilities, but not in the substance of humanity....Humanity itself, the ethos of man, his goodness and wisdom, make no progress."³⁶ In sum, for astrobiologists to work with a conceptual set that

³⁴ Taylor E. Dark III, “Reclaiming the Future: Spce Advocacy and the Idea of Progress” in *Societal Impact of Spaceflight*, edited by Steven J. Dick and Roger D. Launius (Washington DC: NASA SP-2007-4801, 2007) 555-571: 555.

³⁵ Paul C.W. Davies, “Biological Determinism, Information Theory, and the Origin of Life,” in *Many Worlds: The New Universe, Extraterrestrial Life, and the Theological Implications*, edited by Steven J. Dick (Philadelphia and London: Templeton Foundation Press, 2000) 15.

³⁶ Karl Jaspers, *Origin and Goal of History* () 252.

presupposes progress within biological evolution and to look forward to a future of transformed human nature is to risk deviation from the conceptual set at work in the other sciences and in the humanities as well.

Regardless of which myth belongs to which science, some scientists bristle at my suggestion that any myth at all could influence their research. Such scientists will argue that every set of assumptions is subject to critical testing; and when assumptions become disconfirmed they are dropped. No conceptual set gets a free pass. Every pre-conception and conception is subject to falsification and repudiation. A form of demythologizing is already implicit in the scientific method.

We must grant: yes, this is the case. In principle, science avoids myth. But what is the case in principle may not always function in fact. In some cases, myth persists with only minimum if any demythologizing at all. My task here is to point out just how myth serves to filter the meaning of what scientists learn, regardless of when, if ever, the myth becomes subjected to critical review.

What we have just done methodologically is identify the continuing work of the ancient gnostic myth intertwined with the biblical promise of eschatological salvation within the modern scientific mind. Within the larger scientific mind, we need to funnel down with specificity to astrobiology and related space sciences.

The ETI Myth

To be more precise, it is the evolutionary advance of science that saves, according to the ETI Myth. How might the human imagination conceive of such an idea? Let us follow the trail of reasoning once again.

Eminent exobiologist Carl Sagan cultivates the ETI Myth by defining the current phase of human evolution on Earth with a

heuristic metaphor, *technological adolescence*.³⁷ Previously, we were infants. In the future, we will mature. Chapters one, two, and three. Right now, we find ourselves in the middle.

In this middle stage, we have come to the point of a moral crisis on Earth or, to use a theological term, we are *fallen into sin*. This sinful fallenness requires repentance, says Guillermo Lemarchand. "Our civilization could collapse due to the failure to solve our mutual aggressions (e.g., human maldevelopment, arms race, population explosion, starvation, global warming, ozone depletion, etc.)....If humankind does not make a deep change in its social behavior to eliminate violence, human kind will disappear in less than a thousand years," maybe only thirty years.³⁸ Just like the prophets of ancient Israel, Lemarchand renders judgment against society and demands repentance under threat of destruction. Can heaven save earthlings?

The idea of Earth's adolescence lays a plank in the ETI myth platform. The logic looks like this: if an off-Earth civilization has advanced to the point where it can engage in inter-planetary communication or even spacefaring, then it must have passed through the equivalent of our crisis and preserved itself from self-destruction. Such an ET civilization will have learned how to avoid nuclear self-annihilation and ecological catastrophe. And perhaps ETI will have advanced to a higher level of moral values and spiritual achievement. "All technological civilizations that already have passed through their technological adolescence, and have avoided their self-destruction,...must have developed ethical rules to extend their societal life expectancy." ³⁹ When high-impact communication between Earth and ETI occurs, we on Earth may benefit from ET's more advanced morality, a mature morality which may save our

³⁷ Carl E. Sagan, *The Cosmic Connection: An Extraterrestrial Perspective* (New York: Doubleday, 1973).

³⁸ Guillermo A. Lemarchand, "Speculations on First Contact," *When SETI Succeeds: The Impact of High-Information Contact*, ed. Allen Tough (Bellevue WA: The Foundation For the Future, 2000) 156-157.

³⁹ *Ibid.*, 154.

planet from self-immolation. In short, Earth's salvation may come to us from sky science. Might we say that this constitutes practicing theology without a license?

The eminent co-founders of SETI, Carl Sagan and Frank Drake, prophesy: contact with extraterrestrials “would inevitably enrich mankind beyond imagination.”⁴⁰ Drake dreams about this enrichment. “Everything we know says there are other civilizations out there to be found. The discovery of such civilizations would enrich our civilization with valuable information about science, technology, and sociology. This information could directly improve our abilities to conserve and to deal with sociological problems—poverty for example. Cheap energy is another potential benefit of discovery, as are advancements in medicine.”⁴¹ Note how this optimism extends well beyond mere contact with ETI. It includes optimism regarding the solution to “sociological” problems such as poverty and energy while giving us a leap forward in medicine. What Drake believes is that science is salvific, and extraterrestrial science would be even more salvific than Earth’s science.

Elsewhere Drake has waxed ecstatically about the prospect that contact with ETI might even bring immortality. "I suspect that immortality may be quite common among extraterrestrials. By immortality I mean the indefinite preservation, in a living being, of a growing and continuous set of memories of individual experience...Sometimes, when I look at the stars I wonder if, among the most common interstellar missives coming from them, is the

⁴⁰ Sagan and Drake, “The Search,.”

⁴¹ Cited by Diane Richards, “Interview with Dr. Frank Drake,” *SETI Institute news*, 12:1 (First Quarter 2003) 5. See: Douglas A. Vakoch and Matthew F. Dowd, *The Drake Equation* (Heidelberg: Springer, 2016) xvi. Linda Billings, NASA consultant, excoriates SETI for its unrealistic hope. SETI has “used the Drake equation to construct a mythology, a sort of origins myth, about extraterrestrial life.” “The Allure of Alien Life,” *The Impact of Discovering Life Beyond Earth*, ed., Steven J. Dick (Cambridge UK: Cambridge University Press, 2015) 308-323, at 317. It is not an origins myth we find at SETI, but rather a myth of eschatological redemption.

grand instruction book that tells creatures how to live forever."⁴² Drake's vision is eschatological, incorporating not only improved health but also life without death. This is a grand and beautiful vision, to be sure; but we ask: is this science? Or, is it practicing theology without a license?

Physicist turned astrobiologist Paul Davies provides a succinct version of the ETI myth complete with gnostic redemption. "Any alien civilization the SETI researchers might discover is likely to be much older, and presumably wiser than ours," writes Davies. "Indeed, it might have achieved our level of science and technology millions or billions of years ago....it is more likely that any civilization that had surpassed us scientifically would have improved on our level of moral development, too. One may even speculate that an advanced alien society would sooner or later find some way to genetically eliminate evil behavior, resulting in a race of saintly beings."⁴³

Let us look at the presuppositions at work in Davies' conceptual set. First, evolution is progressive; evolution leads over time to advances science and technology. Second, reliance on science and technology is a form of reliance on knowledge, gnosis. In ancient gnosticism knowledge was esoteric; it belonged only to an elite. In modern science, knowledge is available to everyone; knowledge is democratic. At least in principle. In practical fact, scientific knowledge about outer space is possessed only by an elite class of scientists who dispense this knowledge. Third, science has the capacity to overcome evil, to make saints. That is, scientific knowledge provides the path to redemption. Fourth, if progressive evolution continues over enough years, we too will become saintly beings. What is unspoken is the fifth implication, namely, contact

⁴² Frank Drake and D. Sobel, *Is Anyone Out There? The Scientific Search for Extraterrestrial Intelligence* (New York and London: Pocket Books, 1994) 162.

⁴³ Paul Davies, "E.T. and God," *The Atlantic Monthly* (September 2003) 114-115; <http://www.theatlantic.com/issues/2003/davies.htm>.

with such highly advanced spacelings now might include a transfer from their heavenly location to our earthly location of advanced science and even of saintliness. That is, contact with highly evolved extraterrestrials may save Planet Earth. The sixth unspoken yet operative presupposition is a three part history of life on Earth: (1) the previous era before the rise of science when humanity lived in religious darkness; (2) the present era of human darkness with the scientists' flashlight of redemption lighting the way forward; and (3) contact with more advanced extraterrestrial intelligences who could bequeath to us full enlightenment, saintly existence, and redemption of our planet. This, in short, is the ETI myth at work.

Davies is perhaps my favorite among space researchers because he articulates what many others are just thinking. In an earlier work, Davies, speculates that "there may be tens or even hundreds of millions of inhabited planets in our galaxy;"⁴⁴ and most of these will be more highly evolved and advanced than we on Earth. Should we hear microwave signals from an extraterrestrial civilization, it would likely be "more developed scientifically, culturally, and ethically than ourselves."⁴⁵ Just how does Davies jump to "more developed" not only in science but also in ethics? Where is the empirical warrant for this speculation? Perhaps Davies works with an unspoken conceptual set--a myth--that says: science saves.

Might this constitute practicing theology without a license? Should theologians ask their astrobiological colleagues to stick to their science rather than dabble in myth, theology, and evangelism?

Conclusion

The eyes of the scientists are teary and blurry with droplets of myth. This may sound outrageous, but I am not making this up. Others

⁴⁴ Davies, *Space and Time*, 209.

⁴⁵ *Ibid.*, 210.

have recognized this. The United Nations, for example, has sought to provide a unified global approach to space exploration, including the search for signs of life. The UNESCO document, "The Ethics of Space Policy," includes this insightful if not embarrassing passage: "Science is seeking an answer to questions associated with the great myth...Scientific knowledge is not sufficient to enable reference to the myths or imagination to be surpassed."⁴⁶ What we need to do now is ferret out the complex mixture of science *with* myth or, perhaps more precisely, science *as* myth.

This suggests that the astrotheologian should take astrobiology and related space sciences seriously, but hesitate to take scientized myths literally.

Whether biological evolution is progressive or not is a question for the scientists themselves to answer. Which way it turns out is not an issue for the theologian. What is at issue is the way in which evolution replete with progress has taken on the role of myth in our culture and even in segments of the scientific community. The conceptual set we know as *evolution* "is now doing what all myths have always done," writes Langdon Gilkey; "namely, to provide that widest framework of understanding which underlies man's self-understanding, his activities, values, and hopes, and about which therefore he can never be precise or scientific. Such scientific myths are no longer science."⁴⁷

Lest there be any ambiguity, perhaps I should state flatly: I am not saying that physical cosmology or evolutionary biology are bad science. Rather, our researchers perform sound science. What I am saying is this: evolutionary theory should not be confused with progress. And progress connected to scientific salvation should be expunged from theorizing about outer space.

⁴⁶ UNESCO, "The Ethics of Space Policy,"

<http://unesdoc.unesco.org/images/0012/001206/120681e.pdf>, accessed 12/23/2012.

⁴⁷ Gilkey, *Religion and the Scientific Future*, 38.

The interaction between the theologian and the scientist at this point takes the following form: the theologian is asking the scientist to perform the best science. Science at its best recognizes what is known, what can be known, and what the limits of such knowledge are. Science at its best restricts itself from making myths or trying to upstage theology. In the words of philosopher Karl Jaspers, we want a "genuine science which is as clearly aware of what can be known as it is decisively conscious of its limits."⁴⁸

⁴⁸ Karl Jaspers, *The Origin and Goal of History* (London: Routledge, 1953) 95.