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Interdisciplinary Convergence to God:  
A Supplement to The Big Bang & God--An Astro-Theology  

Theodore Walker Jr.

Abstract –

Here is a December 2022 supplement to the 2015 book—The Big Bang and God: An Astro-Theology wherein an astronomer and a theologian offer a study of interdisciplinary convergences with natural theology both in the scientific researches of Sir Fred Hoyle and in the philosophical researches of Charles Hartshorne and Alfred North Whitehead, thereby illustrating a constructive postmodern trend (New York: Palgrave Macmillan, 2015) by Theodore Walker Jr. and Chandra Wickramasinghe, with editing and co-authoring by Alexander Vishio.

Biology, astronomy, astrobiology, cosmology, and theology converge when the word “God” refers to “that than which none greater can conceived” (St. Anselm), and therefore to “the one all-inclusive whole of reality,” the “universal individual” (Schubert Ogden, Charles Hartshorne), the all-inclusive and eternally creative Creator.

Accordingly, “Convergence to God” was the penultimate title of The Big Bang and God: An Astro-Theology … (2015) and the ultimate title of the concluding chapter in Evolution from Space: A Theory of Cosmic Creationism (1981) by Sir Fred Hoyle and Chandra Wickramasinghe.

This supplement includes the original Preface, the original Summary Preview, plus eight new Abstracts abstracted from each of the original eight chapters, and a new selected Bibliography.

Keywords:

astro-theology; cosmo-theology; interdisciplinary convergence; natural theology; constructive postmodern science; process-relational theology; neoclassical theology

Original Preface to Big Bang and God: An Astro-Theology … (2015)

By references to scientific literature, including many technical papers, an interdisciplinary convergence is historically described, critically evaluated, and constructively advanced. This study of scientific literature by and about Sir Fred Hoyle and his collaborators shows how astronomy, biology, astrobiology, astrophysics, and cosmology converge with natural theology. And, as advanced by constructive postmodern scholars instructed by mathematician-philosopher Alfred North Whitehead and logician-philosopher Charles Hartshorne, natural theology yields biology and psychology with cosmological scope. Accordingly, this book could have been entitled “Convergence to God: Astronomy, Biology, Astrobiology, Astrophysics, Psychology, Cosmology, and Natural Theology.”
This book was co-authored by an astronomer [astrobiologist and long-time Hoyle research collaborator Chandra Wickramasinghe] collaborating with a theologian [theological ethicist Theodore Walker Jr.]. An early modern label appropriate to such interdisciplinary convergence is “Astro-Theology” (William Derham 1715). Our contemporary revision—of an early modern astro-theology—illuminates a constructive postmodern trend. At fundamental levels, advancing natural scientific disciplines are more and more converging with natural theology.

Illuminating this constructive postmodern trend by reference to technical scientific literature (plus popular scientific writings by technical researchers) in each of the converging disciplines [astronomy, biology, astrobiology, astrophysics, psychology, cosmology, philosophy of nature, and natural theology] demands a sizable interdisciplinary bibliography. Also, this constructive postmodern trend includes natural scientific disciplines converging [or re-converging] with various artistic disciplines, especially poetry. Hence, poets (including Samuel Taylor Coleridge, and Edgar Allan Poe!), science fiction writers (including Octavia E. Butler, Arthur C. Clarke, and Fred Hoyle!), and other artists appear throughout this study. They are essential to the history of science. And documenting this enlarges an unavoidably large interdisciplinary bibliography. Moreover, future research, within and across various natural scientific disciplines and fields that converge with natural theology, can benefit from a thoroughly technical and appropriately interdisciplinary bibliography. (Walker and Wickramasinghe 2015: xi-xii)

Original Summary Preview of Big Bang and God: An Astro-Theology … (2015)

interstellar and cometary seeding is called “cometary panspermia” (1981a [1980]). Accordingly, microbiology was extended from exclusively Earth science to astronomy, astrobiology, and comet science.

Moreover, Hoyle and Wickramasinghe argued that cosmic fine-tuning is required to make biology possible (1981b). Cosmic fine-tuning exemplifies divine attributes: cosmic intelligence (omniscience), cosmic influence (omnipotence), and cosmic providence. Hence, astrobiology requires a cosmology that is consistent with theology.

Basic types of theology are identified and evaluated in *Philosophers Speak of God* (1953) by Charles Hartshorne and William L. Reese. One type of natural theology advanced by Alfred North Whitehead, and further advanced by Hartshorne, is appropriate to the work of Hoyle and Wickramasinghe: *panentheism*.

Panentheism, from *pan-*en-*theos-*ism, means all-in-God-ism. According to panentheism, all that is actually real (*pan*) is included in (*en*) God (*theos*). “All things are in him,” says Saint Anselm of Canterbury (Williams 1955: 388). God is the all-inclusive whole of reality (Hartshorne 1973 [1967]: 7, 12, 16; Ogden 1984b: 21). And the divine whole of reality is greater than (because inclusive and transcendent of) the sum of all parts of reality. The aggregate sum is called “universe” or “cosmos,” and the greater-transcendent whole is “God.” God is therefore “that than which nothing greater [better or even equal] can be conceived” (St. Anselm).

*Anselm’s Latin, according to Norman Malcolm, is: aliquid quo nihil maius cogitari possit. And Malcolm reports that Anselm sometimes used these two alternatives to identify God: aliquid quo maius nihil cogitari potest, id quo maius cogitari nequit, and aliquid quo maius cogitari non valet (1960: 41). Also, see *Anselm’s Discovery* (Hartshorne 1965).

As advanced in constructive postmodern thought, panentheism is consistent with *panpsychism* (also called “panexperientialism” [David Ray Griffin 2007: 12]) and with *panspermia*. In other words, panoramic theology is consistent with panoramic psychology and panoramic biology.

Panspermia, meaning panoramic provisioning for the possibility of newly emerging life, agrees with the theological conception of God’s universal life-favoring providence and with the “philosophy of organism” developed in *Process and Reality: An Essay in Cosmology* (Whitehead 1927-28). And this *generic* panspermia (that agrees with a theology of providence and a cosmological philosophy of organism/biology) is factually exemplified by “cometary panspermia” (Hoyle and Wickramasinghe 1981a [1980]).
Hence, as advanced by astronomer-cosmologist Sir Fred Hoyle and astrobiologist Chandra Wickramasinghe, *astronomy, biology, astrobiology, astrophysics, and cosmology converge with natural theology*. And as advanced by constructive postmodern scholars instructed by Alfred North Whitehead and Charles Hartshorne, *natural theology yields biology and psychology with cosmological scope*.

This study corrects the prevailing view that Hoyle was unchangeably committed to atheism, and it corrects a widely shared misconception concerning relations among astronomy, cosmology, biology, and theology. In modern astronomy and cosmology, it is often conceived that while big bang cosmology implicitly supports the idea of a divine creator (required to ignite the big bang “in the beginning”), any alternative cosmology with “no boundary” (no absolute beginning) must witness against the idea of a divine creator (Hawking 1988). And, of course, it is frequently conceived that evolutionary biology witnesses against the idea of a divine creator. As a corrective, this study reveals that both no-boundary cosmology and evolutionary biology agree with natural theology.

(Walker and Wickramasinghe 2015: xvii-xix)
Chapter by Chapter Abstracts - concerning *Big Bang and God: An Astro-Theology* … (2015):

Abstractions from
Chapter 1 Astro-Theology and Cosmology

An early modern convergence of math-and-telescope-assisted astronomy with systematic theology was presented in the book *Astro-Theology: Or, A Demonstration of the Being and Attributes of God, from a Survey of the Heavens* (London: William Innys, 1715), written by observational astronomer and Anglican clergyman William Derham (1657-1735). Our present day constructive postmodern revision (of Derham’s early modern astro-theology) includes appreciating advances in astronomy and cosmology achieved by Sir Fred Hoyle. In cosmology, Hoyle is remembered for advancing steady-state and quasi-steady-state cosmologies, and for giving the name “big bang” to an alternative cosmology advanced by Georges Lemaître (and by poet-writer Edgar Allan Poe). And though initially Hoyle argued against big bang cosmology, subsequently he made highly significant contributions to big bang, inflationary, oscillatory, and multiverse cosmologies. In the next chapter, we appreciate Hoyle’s contribution to theory about stellar evolution.

Abstractions from
Chapter 2 Interdisciplinary Convergences: From Stardust to Generalised Deity

Astronomy and physics converged with chemistry in Hoyle’s account of our creation and evolution from stardust. Stars are astrochemical factories synthesizing the heavier elements, and exploding these elements into interstellar space where those elements become parts of subsequent generations of stars and planets. *Stellar evolution* makes carbon-based life possible by synthesizing carbon and other elements essential to life. Thus, Hoyle contributed to the development of new convergent disciplines: nuclear astrophysics, astrochemistry, and astrobiology. Astrobiology was further advanced when Hoyle and Wickramasinghe argued that interstellar dust includes organic molecules, and that comets circulate water and organic materials, including bacteria and viruses, a theory called “cometary panspermia.” Moreover, astrobiology and cosmology converged with natural theology in “Convergence to God” (1981b) by Hoyle and Wickramasinghe. Here, they held that any possibility for life in the universe depends upon cosmic providence. The cosmic provider is God. Hoylean-Wickramasinghean astrobiology requires a cosmology that agrees with theology, an astro- and cosmo-theology.

Abstractions from
Chapter 3 Microbiology and Cometary Panspermia in Context

Unlike late modern science, constructive postmodern science (such as this revision of early modern astro-theology) does not exclude theology. Fred Hoyle started his career as an atheist; but his commonsense interpretation of scientific evidence forced a pro-theistic conclusion: A super intellect is exerting cosmic influences favoring life. Also, Hoylean-Wickramasinghian thinking about microbial life in outer space (amid comets, stars, and interstellar dust) challenges modern scientific commitment to the unproven idea that microbial life originated in a primordial pond on Earth. Hence, late modern scientific prejudice has continually suppressed and ridiculed evidence of microbial life in the upper stratosphere, and
evidence of microbial fossils in meteorites from comets. Though cometary panspermia remains a widely resisted theory, supporting evidence is growing stronger, and resistance is growing weaker.

Abstractions from
Chapter 4 Cosmology, Reality, and Panoramic Theology

Among “cosmic variables” (Hartshorne), there are variations in reality-inclusiveness. Attending to variations in reality-inclusiveness yields these options for conceiving of the reality of God: Conceiving that God is the all-inclusive whole of reality (and that the whole is greater than the sum of all included parts, all parts of reality) is panentheism. Conceiving that God is merely the sum of all parts of reality is pantheism. Conceiving that God is some part(s) of reality [perhaps some purely spiritual part(s)] is classical theism. And conceiving that God is none of reality (not real) is atheism. Constructive postmodern theology affirms panentheism. Accordingly, there must be one God (one all-inclusive whole of reality), and one universe (one set of all parts of reality). Speaking of more or less than one of either is self-refuting.

Abstractions from
Chapter 5 Cosmology, Panoramic Biology, and Panoramic Psychology

Cosmology is where panoramic biology (panspermia) and panoramic psychology (panpsychism) meet panoramic theology (panentheism). Panspermia, meaning panoramic provisioning for the possibility of newly emerging life, agrees with the theological conception of God’s universal life-favoring providence. This generic panspermia is exemplified by cometary panspermia (Hoyle and Wickramasinghe 1981a [October 1980]). Panpsychism [also called “psychicalism” and “universal psychicalism” (Hartshorne 1984b) and “panexperientialism” (Griffin 2007)] holds that experience (a psychical concept) is never entirely absent. Experience is panoramic. Classical panpsychism has been significantly revised and re-categorized as “neoclassical” (Hartshorne 1962) and as constructive “post-modern” (Cobb Spring 1964). Panentheism, in constructive postmodern theology, affirms cosmic consciousness, cosmic providence, cosmic creativity (a divine Creator creatively and providentially interacting with all creatures and creations), and hence cosmic evolution.

Abstractions from
Chapter 6 Analogy, Metaphysics, Mythical Symbols, and Religion

Rāmānuja, a south Indian Brahman (1017-1137) employed mind-body analogy to reach a panentheistic conclusion. A human mind has a human body. Analogously, a universal mind has a universal body. The universe is the body of God. Pre-modern mind-body analogy, along with modern (microscope-assisted) person-to-cell analogy, and transcendental metaphysics (study of logically necessary features of existence as such) are among constructive postmodern methods of doing natural theology. Charles Hartshorne frequently argued metaphysically from logical necessity to theology; and he sometimes argued analogically from psychology and biology to theology. Also, mythological images can be used to express scientific ideas. In Cosmic Dragons (2001) Chandra Wickramasinghe employs Chinese dragon images to symbolize comets, meteors
and meteor showers. This mythological rendering of cometary panspermia inspires religious sentiments.

**Abstractions from**
Chapter 7 *Future Interdisciplinary Convergences with Theology: A Constructive Postmodern Trend*

The modern separation of disciplines from other disciplines is still very much present. Nevertheless, we predict a constructive postmodern future. We predict increasing interdisciplinary advances and convergences, including convergences with poetry and other artistic disciplines. In science, where theology is not explicit, it is merely implicit. To the extent that scientists and other natural philosophers continue to value explicit over implicit, we can be fully confident in predicting continuing advances toward and convergences with natural theology, especially with constructive postmodern natural theology, panentheism.

**Abstractions from**
Chapter 8 *Future Astrobiology*

In contemporary modern biology, the accepted paradigm holds that life emerged from non-life by random assembly in a primordial soup on planet Earth. This modern theory of spontaneous generation has classical roots (Aristotle); and it is consistent with medieval and modern commitments to Earth-centered metrics [cosmology and astronomy reduced to geometrics] and Earth-centered biology. Earth-centered metrics were challenged by Copernicus. Earth-centered biology is challenged by cosmic biology, stellar evolution, and cometary panspermia. Recent developments in observational research are producing a cumulative case for expanding the scope of biology into the extraterrestrial realms of comet science, astronomy, and cosmology. These recent developments include developments in viral sequencing, astronomical spectroscopy, data from meteorites and comets, data from the Sheffield balloon experiments, and data from the *Rosetta* Mission to Comet 67/P.
Bibliography

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Rees, Martin. (10 January 2011). “Life in the Cosmos” is a Madingley Lecture at University of Cambridge.


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