

THE SEARCH FOR THE CONVERGENCE OF THE ABSOLUTE BEGINNING AND THE DOCTRINE OF *CREATIO EX NIHILO**



Fedor Minakov, M.A.T.S. candidate, Westminster Seminary California B. Th., Donetsk Christian University; B. Th., Reformed International Theological Seminary.

© F. Minakov, 2017

Theological Reflections #18, 2017

Abstract: Science and theology have very different methodology and use different tools. Despite the differences sometimes both disciplines try to answer same question. One of the questions addressed by science and theology is the origin of the universe. Present article is an attempt to describe how certain scientific achievements in cosmology can support biblical message about the beginning of the world. Bible teaches that the world was created by God out of nothing a finite time ago. Current cosmology holds to the view that is widely known as the Big Bang theory. According to this theory the universe appeared out of the state of infinite

density around 15 billion years ago. This revolutionary statement implies that modern physicists do not adhere anymore to the view that the universe is eternal. Thus, both Bible and science claim that the universe had the beginning. Some theoretical physicists have proposed that the universe came out of nothing. Analysis shows that although the statement sounds similar to the doctrine of *creatio ex nihilo* it has different meaning. However, this difference does not annul the possibility of the convergence of two sides.

Keywords: Creation, Big Bang, Genesis 1, cosmology, convergence

* The article received on 22.12.2016; approved for publication on 7.02.2017.

Introduction

Throughout the centuries many astronomers and philosophers had thought that the universe is eternal. This predominant view has conflicted with the belief that Christian tradition has proclaimed since the very beginning, namely that God created the universe. Since the XXth century things has radically changed. Most of the contemporary cosmologists claim that the universe is not eternal, and increasing number of modern theologians has claimed that God did not create but rather shaped the universe. Such a flip of positions begs the question whether the case can be made for the convergence between Biblical and scientific cosmologies.

New astronomical discoveries have prompted Christian scholars to pay attention to the topic of the origin of the universe and write their reflections with renewed enthusiasm. Some thinkers like Paul Copan, William L. Craig and Francis S. Collins argue that both scientific evidences and biblical data point to the fact that the Universe had the absolute beginning in the finite past. Others like Ian Barbour, John Polkinghorne and Mary-Jane Rubenstein avoid this conclusion doubting that the doctrine of *creatio ex nihilo* represents biblical view and that scientific data can be correlated with the philosophical idea of nothingness presupposed in the doctrine.

The task of this article is to compare present state of cosmology as it described by the leading theoretical physicists and philosophers with the biblical view of creation of the universe. The article is dedicated to the description of the theory of absolute beginning as it is supported by observations and is almost unanimously accepted theory of the origin of the universe among modern cosmologists. The paper presents arguments in favor of the doctrine of creation *ex nihilo* as the biblical view. This article also deals with the correlation of the popular theory of quantum gravity with the doctrine of creation. Proposed by the theory state of “nothingness” has caused some confusion among thinkers when compared to the “nothingness” of the *ex nihilo* doctrine.

The objective of this paper is to find out whether the model of the absolute beginning of the universe converges with the doctrine of creation *ex nihilo*. *The doctrine of creation ex nihilo being the biblical view confirms and complements the standard model of the absolute beginning of the universe and does not contradict to the quantum creation hypothesis.* For the support of this thesis the first section is dedicated to the presentation of the basic points of the absolute beginning model. The next section affirms the doctrine of creation *ex nihilo* as biblical teaching in relation to counterarguments of J. Polkinghorne and I. Barbour. The third section analyses differences in the description of the term “nothingness” in science as the alleged obstacle to the consonance of the two concepts.

I. The Quest for the Beginning of the Universe

“For those looking to bring the theologians and the scientists closer together, there is much in these recent discoveries of the origin of the universe to inspire mutual appreciation.”¹

The world and the Bible are two sources of divine revelation according to Westminster Confession of Faith (WCF 1.1). Both “books” are true and revealing and both come out of the “mouth of God” according to the Christian view. God speaks the world into existence (Gen. 1:1-2:3) and the Word is breathed out by Him (2 Tim. 3:16). Another feature that they both share in common is the possibility of interpretation. It is here the potential problem arise since the interpretation can be wrong. Theologians exegete the Bible, scientists explore the universe and the history of both theology and science proves the fact that even an interpretation of professionals can be erroneous.

Nevertheless, if general and special revelation comes from One source, their proper interpretation would not contradict each other. Moreover, both revelations would complement and verify each other. If both science and theology claim that the universe had the beginning this may at least potentially mean that their agreement indicates correct interpretation of both revelations.

It was the prevalent opinion for a great period of time that the universe does not have a beginning. The universe is eternal according to ancient philosopher Aristotle.² His ideas on the infinite existence of the universe dominated minds of medieval scientists and were mostly unquestioned until twentieth century.³ But at the beginning of 20th century scientific understanding of the universe underwent dramatic change due to several significant events.

The story may be traced back to Einstein’s formulation of the general theory of relativity in 1915. His calculations argued against a static universe so he modified his equation being sure that it must be wrong.⁴ Alexander Friedman and Georges Lemaitre, based on general relativity, formulated the mathematical model which predicted the expansion of the universe in 1920s.⁵ In 1929 Edwin Hubble confirmed Friedman-Lemaitre predictions. He discovered by the observation of the redshift of the spectra,

¹ Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York, NY: Free Press, 2006), 66.

² Stephen W. Hawking, *A Brief History of Time: From the Big Bang to Black Holes* (New York, NY: Bantam Books, 1988), 7; Alister McGrath, *Inventing the Universe: Why We Can’t Stop Talking About Science, Faith and God* (London, UK: Hodder & Stoughton, 2015), 69.

³ Christopher B. Kaiser, *Creational Theology and the History of Physical Science: the Creationist Tradition From Basil to Bohr* (Leiden, Netherlands: Brill, 1997), 84-133; McGrath, *Inventing the Universe*, 69-71; Hawking, *A Brief History of Time*, 40. He writes, “Yet so strong was the belief in a static universe that it persisted into the early twentieth century.”

⁴ Hawking, *A Brief History of Time*, 40.

⁵ William Laine Craig and James D. Sinclair, “The *Kalam* Cosmological Argument,” in *The Blackwell Companion to Natural Theology*, ed. William Laine Craig & J. P. Moreland (West Sussex, UK: Wiley-Blackwell, 2012), 125-129.

which happened to be a Doppler effect, that the universe is expanding.⁶ Later on his observation was confirmed by Arno Penzias and Robert Wilson who found cosmic background radiation in 1965.⁷ Since then scientists have come to agreement that the universe is actually expanding. The extrapolation of this fact back in time has led them to the conclusion that it may not be eternal but that the universe had a beginning.⁸

In 1996 leading theoretical physicist, Stephen Hawking writes, “Almost everyone now believes that the universe, and time itself, had a beginning at the big bang.”⁹ After the series of the revolutionary discoveries in science the cosmologists finally agreed on the model that has been mockingly called by Fred Hoyle the “Big Bang.”¹⁰ According to this model the universe had an absolute beginning in the past out of nothing.¹¹

According to the big bang cosmogony the universe burst out of a singularity around 15 billion years ago.¹² The point of singularity is the point of zero radius and infinite density of matter and energy¹³. Ukrainian cosmologist, Alexander Vilenkin writes about the singularity theorem, “... as the evolution of the universe is followed backward in time, the density of matter and the curvature of space-time grow without bounds, becoming infinite a finite time ago. The moment of infinite density is a cosmological singularity.”¹⁴

It's important to note that singularity is the point of not only the origin of matter or energy, but also of the space and time itself. According to such a model it would be improper to say that there was something prior to the singularity because the phrase invokes temporal relations. It is also wrong to imagine a state of singularity somewhere in the empty space since the space itself originated out of this singularity. Philosopher William Lane Craig and physicist James D. Sinclair write, “Moreover – and this deserves underscoring – the origin it posits is an absolute origin *ex nihilo*. For not only all matter and energy but also space and time themselves come into being at the initial cosmological singularity.. On such a model the universe originates *ex nihilo* in

⁶ Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (New York, NY: Harper Collins, 1997), 195.; Hawking, *A Brief History of Time*, 38-39. Hawking notes, “The discovery that the universe is expanding was one of the great intellectual revolutions of the twentieth century.”

⁷ Ibid.

⁸ McGrath, *Inventing the Universe*, 72. He writes, “Since then, the basic elements of the standard cosmological model have become clarified and have secured widespread support within the scientific community. Although there remain significant areas of debate, this model is widely agreed to offer the best resonance with observational evidence.”

⁹ Stephen Hawking, *The Nature of Space and Time* (Princeton, N.J.: Princeton University Press, 1996), 20.

¹⁰ Craig & Sinclair, 130.

¹¹ Ibid.

¹² John Polkinghorne, *Science & Theology: An Introduction* (Minneapolis, Minnesota: Fortress Press, 1998), 34.

¹³ Ibid.

¹⁴ Alexander Vilenkin, “The Beginning of the Universe,” *Inference: International Review of Science* 1, no. 4 (October 2015). Accessed November 19, 2016. <http://inference-review.com/article/the-beginning-of-the-universe>.

the sense that it is false that something existed prior to the singularity.”¹⁵ This model is known as the Hawking-Penrose theorem of singularity.¹⁶

However, it is believed that the origin of the universe cannot be described solely by the laws of general relativity, because they work on the large scales. Since the universe at the beginning was of the size of subatomic particles, it must have been governed by the laws of quantum physics which seem to be in conflict with general relativity.¹⁷ The certainty of scientific knowledge fades when the universe approaches 10^{-43} seconds of Planck time.¹⁸ This is the time when the universe is so small that known physical laws break down. The problem with quantum mechanics is that it is a relatively new field with some yet unknown and unverifiable variables.¹⁹ John Polkinghorne writes about this period, “Since there is still no fully satisfactory reconciliation between quantum theory and general relativity (the modern theory of gravity and so the basis of all cosmological theorizing), the many discussions of quantum cosmology that are offered in the popular literature must be treated with a degree of caution.”²⁰

Since general relativity could not fully explain the processes on the level of nuclear physics, scientists came up with a number of theories that could reconcile both gravity and quantum mechanics and explain the state of the very early history of the universe and perhaps avoid the conclusion of its absolute beginning.²¹ One of the famous examples of the attempt to present the model of the universe without the beginning is the so-called “no boundary” theory developed by Stephen Hawking and James Hartle.²² In that case the universe “would just be” without a precise point of time.²³

¹⁵ Craig & Sinclair, 130; See also, William Lane Craig and Quentin Smith, *Theism, Atheism, and Big Bang Cosmology* (New York, NY: Oxford University Press, 1993), 43. Craig writes, “This event that marked inception of the universe becomes all the more remarkable when one reflects that a condition of ‘infinite density’ is precisely equivalent to ‘nothing.’ There can be no object in the real world that possesses infinite density, for if it had any size at all, it would not be *infinitely* dense.”

¹⁶ *Ibid.*, 130-132.; Vilenkin, “The Beginning of the Universe,” 1.

¹⁷ Polkinghorne, 25-32. He points out, “At one level, the formal difference between classical physics (Newton) and quantum physics... was perfectly straightforward. At a deeper level, the interpretation of the new theory was murky, and it remains so.” (p. 26).

¹⁸ *Ibid.*, 34-35.

¹⁹ Houston A., Craighead “Quantum Physics, Big Bang Cosmologies, and God: An Argument from Contingency,” *Perspectives in Religious Studies* 22, no. 2 (Sum 1995): 162. He notes, “...Quantum mechanics is a very highly theory-laden enterprise,”

²⁰ *Ibid.*, 35. See also, Ian G. Barbour, *When Science Meets Religion: Enemies, Strangers, or Partners?* (New York, NY: HarperCollins, 2000), 41. Barbour writes, “The farther back we go before three minutes, the more tentative are the theories, because they deal with states of matter and energy increasingly farther from anything we can duplicate in the laboratory.”

²¹ For the list of the most popular models and their assessment see: Craig & Sinclair, 132-182. Craig & Sinclair point out, “It is fascinating to note that the recent history of cosmology can be mapped by attempts to overcome these singularity theorems.”; Audrey Mithany, Alexander Vilenkin, “Did the Universe Have a beginning?” (April 2012). Accessed November 19, 2016. <http://arxiv.org/abs/1204.4658>.

²² Hawking, *A Brief History of Time*, 133-141.

²³ *Ibid.*, 136, 139;

The problem with this theory as Hawking himself states is that it does not represent reality, but it is purely an abstract idea with no ontological confirmation.²⁴

Other theories that were trying to extend the life of the universe into past-eternity, such as eternal inflation, cyclic and “emergent” universe, have encountered with the singularity theorem published by Alexander Vilenkin, Arvind Borde and Alan Guth in 2003.²⁵ In 2012 conference in Cambridge Vilenkin presented his paper in which he refused all scenarios for the past-eternal universe one by one on the basis of his theorem.²⁶ He concludes: “Did the universe have a beginning? At this point, it seems that the answer to this question is probably yes. Here we have addressed three scenarios which seemed to offer a way to avoid a beginning, and have found that none of them can actually be eternal in the past.”²⁷

Common interpretation of the existence of the universe today is that it did have a beginning.²⁸ As Craig and Sinclair conclude, “It seems that the field of cosmology, therefore, yields good evidence that the universe began to exist.”²⁹ One can say that since there was no time, space or matter prior to the big bang, the universe became out of nothing. In that case harmony could be found between the biblical view on creation and current cosmological views on the origin of the universe. That can be true only if the Bible does state that God created the world *ex nihilo* and if ‘nothing’ of the physics corresponds to the ‘nothing’ of the Bible. The next two sections are dedicated to these two questions.

II. Creation is not Mere Sustenance

In his attempt to combine contemporary hypothesis of the quantum cosmology with the Christian theology Polkinghorne writes, “The thought of the Creator’s *sustaining* (emphasis added) the world in being has traditionally been expressed in Christian theology by the phrase *creation ex nihilo*, creation out of nothing. It does not mean that God used some peculiar sort of stuff called *nihil* from which to make the universe, but that the universe is at all times held in being, rescued from the abyss of nothingness, by the divine will alone.”³⁰ In this statement he replaces the question of the absolute ontological origin of the universe by shifting the emphasis on the

²⁴ Hawking writes, “When one goes back to the real time in which we live, however, there will still appear to be singularities.” *Brief History of Time*, 139. Cf.: Craig & Sinclair, 175-182; Craig and Smith, 280-300.

²⁵ Craig & Sinclair, 141-142. They note, “The Borde-Vilenkin-Guth (BVG) singularity theorem is now widely accepted within the physics community.” (p. 142).

²⁶ Mithani and Vilenkin, “Did the Universe Have a Beginning,” 1-6.

²⁷ *Ibid.*, 5; In 2015 Vilenkin reaffirms his conclusion. He states, “We have no viable models of an eternal universe. The BGV theorem gives us reason to believe that such models *simply cannot be constructed* (emphasis added).” In Vilenkin, “The Beginning of the Universe.”

²⁸ Alister McGrath, *Science & Religion: An Introduction* (Oxford, UK: Blackwell Publishers, 1999), 180; McGrath, *Inventing the Universe*, 72.

²⁹ Craig & Sinclair, 182.

³⁰ Polkinghorne, 80;

dependence of the whole universe from God.³¹ While it is true that God sustains the universe and that He is the ultimate answer to the question of why universe exists, the doctrine of creation also states that God actually brought the universe into existence out of nothing and that God is the only One Who exists eternally.³²

The philosopher Ian Barbour states that the *ex nihilo* creation is not the Biblical doctrine but, rather it is latter invention of the fourth century theologians. He states that Genesis 1 teaches that God created out of pre-existent matter.³³ Although the passage of Gen. 1 is much debated, Barbour's statement is not correct. There are solid exegetical grounds that conclude that the Bible does teach *ex nihilo* creation.

In his book on Genesis 1-4 John Collins unfolds the arguments in support for *ex nihilo* creation.³⁴ It is worth notice that ancient translation of the Genesis, like LXX and Vulgate and Masoretic accent marks render the first verse not as a temporal clause, "In the beginning God created heavens and earth."³⁵ Biblical scholar Claus Westermann in his commentary translates the passage similarly on the basis of the context of the chapter.³⁶ Victor P. Hamilton notes, "In our opinion valid lexical, grammatical, syntactical, comparative, and stylistic arguments have been advanced to substantiate the translation *In the beginning*."³⁷ The normal flow of hebrew narrative includes perfect verbs at the beginning as a description of the prior to the story events.³⁸ The verb *bara* is preserved in the OT only for the God as an actor. This means that

³¹ Although he seems to affirm "ontological origin" of the universe in the sense of its dependency on God, he places the question of its "temporal origin" outside of the scope of the doctrine of creation *ex nihilo* (p. 79-80). Such position allows the supposing of co-eternal existence of the universe with God. He writes, "... God's role is not merely initiation but sustaining, holding the universe in being throughout its history, whether that history is finite or infinite in duration." (p. 80); cf. Barbour, *When Science Meets Religion*, 48-50; *Religion and Science*, 213. He writes, "*The contingency of existence* corresponds to the central religious meaning of creation *ex nihilo*."

³² For the definition of the doctrine of creation *ex nihilo* see for ex.: Westminster Confession of Faith 4.1; Paul Copan, "Is Creatio Ex Nihilo a Post-Biblical Invention? An Examination of Gerhard May's Proposal," *Trinity Journal* 17, no. 1 (Spr 1996): 77-93; Michael Horton, *The Christian Faith: A Systematic Theology for Pilgrims On the Way* (Grand Rapids, MI: Zondervan, 2011), 324-328; J. van Genderen, W. H. Velema, *Concise Reformed Dogmatics* (Phillipsburg, New Jersey: P&R, 2008), 246-265.

³³ Barbour, *When Science Meets Religion*, 48-49; *Religion and Science*, 213; see also, Mary-Jane Rubenstein, "Cosmic Singularities: On the Nothing and the Sovereign," *Journal of the American Academy of Religion* 80, no. 2 (Jun 2012): 485-499; John H. Walton, *Genesis 1 as Ancient Cosmology* (Winona Lake, Indiana: Eisenbraus, 2011). Although Walton does not embrace the interpretation of Gen. 1:1 as a temporal clause, he states that the creation should be understood functionally and not ontologically. He grants that Israelites presuppose the pre-existent matter and thought of creation as of forming something out of something formless. For the critique of his view, see: Noel Weeks, "The Bible and the 'Universal' Ancient World: a Critique of John Walton," *The Westminster Theological Journal* 78, no. 1 (Spr 2016): 1-28.

³⁴ C. John Collins, *Genesis 1-4: A Linguistic, Literary, and Theological Commentary* (Phillipsburg, New Jersey: P&R, 2006), 50-55.

³⁵ *Ibid.*, 50.

³⁶ Claus Westermann, *Genesis 1-11: A Commentary* (Minneapolis: Augsburg Publishing House, 1984), 93-98;

³⁷ Victor P. Hamilton, *The Book of Genesis: Chapters 1-17*, NICOT (Grand Rapids, Michigan: Eerdmans, 1990), 106.

³⁸ J. Collins, *Genesis 1-4*, 51-52.

God's creation acts are distinct from the creaturely deeds.³⁹ 2 Maccabees 7:28-29, 1QS 3:15 and other Jewish writings indicate that Jews understood Gen. 1:1 as the *ex nihilo* creation.⁴⁰ The context of Genesis 1 in contrast with other ANE cosmogonies describes God as the One who has absolute power and nothing can be equal with Him. He simply says, "Let there be light" (Gen. 1:3), and the light appears. He does not form it He just brings it into existence by His Word.⁴¹ Ian McFarland, who doesn't rely on Gen.1:1 as the primary text for the doctrine of *ex nihilo*, nevertheless sees that preexistence of matter in Gen. 1:2 may be dubious in light of such verses as Isa. 45:7, Ps. 148:4-6, Ps. 33:6-9.⁴²

Both passages Rom. 4:17 and Heb.11:3 speak about the calling the universe into being out of non being by His Word.⁴³ Heb. 11:3 states that everything that is seen (βλεπόμενον) has been created (κατηρτίσθαι) not of visible matter (μὴ ἐκ φαινομένων). Thus these passages exclude the creation out of some eternal substance.⁴⁴ Other passages like Rom. 11:36, 1 Cor. 8:6; Eph. 3:9; Col. 1:16; Rev. 4:11; Pr. 8:22-26; Jn. 1:3 can be naturally read from the perspective of the creation *ex nihilo*.

Bible teaches that God created the world not out of some pre-existent matter or substance but simply by His free will in the act of speech. He is not just sustainer of all that is, but the originator *ex nihilo* of the entire universe. It has been shown from section I that the entire universe according to the recent cosmological models had the beginning. So far the science and the Bible agree on the point that the known universe is not eternal. The third section evaluates the meaning of 'nothing' in recent quantum models of the universe.

III. Beyond the Beginning

The commonly embraced conclusion of the beginning of the universe has caused some physicists to think on the question of the causes of its beginning. They are pretty certain about the evolution of the universe after the 10^{-43} seconds of the Plank time. This means that most cosmologists are confident that the universe began a *finite time ago*. But they are not sure what was happening before "about a thousand millionth of a second" from the beginning and they do not know what caused the inception of the universe.⁴⁵

Some theoretical physicists have tried to explain the process of the origin of the universe. One of the common explanations is the theory of quantum creation that

³⁹ Horton, 324.

⁴⁰ J. Collins, *Genesis 1-4*, 52-53; Copan, 85-87.

⁴¹ Horton, 324-328; cf. Richard F. Carlson and Tremper Longman III, *Science, Creation and the Bible: Reconciling Rival Theories of Origins* (Downers Grove, Illinois: IVP Academic, 2010), 115. They write, "It appears that God does not use any preexisting materials but speaks creation into being from nothing pre-existing."

⁴² Ian A. McFarland, *From Nothing: A Theology of Creation* (Louisville, Kentucky: John Knox Press, 2014), 2-4.

⁴³ Paul Copan and William Lane Craig, *Creation out of Nothing: A Biblical Philosophical, and Scientific Exploration* (Grand Rapids, Michigan: Baker Academics, 2004), 75-83.

⁴⁴ Copan, "Is Creatio Ex Nihilo a Post-Biblical Invention?," 90.

⁴⁵ Polkinghorne, *Science & Theology*, 35.

claims that the universe came “out of nothing.” Such explanations are admittedly highly speculative but nevertheless very popular. As one of the scientists states, “The theory of quantum creation is no more than a speculative hypothesis. It is unclear how, or whether, it can be tested observationally.”⁴⁶ Since quantum theories of cosmology (at least at the moment) cannot be verified by any empirical data their conclusions should be treated with caution.⁴⁷ The question relevant to the topic of present work can be raised, whether “nothing” of quantum creation theory is equal to “nothing” of the Biblical view. Alexander Vilenkin in his article states:

If all the conserved numbers of a closed universe are equal to zero, then there is nothing to prevent such a universe from being spontaneously created *out of nothing* (emphasis added). And according to quantum mechanics, any process which is not strictly forbidden by the conservation laws will happen with some probability... One might imagine that closed universe are popping out of nothing like bubbles in a glass of champagne, but this analogy would not be quite accurate. Bubbles pop out in liquid, but in the case of universes, there is no space out of which they might pop. A nucleated closed universe is all the space there is, aside from the disconnected spaces of other closed universes. Beyond it, there is no space, and no time. What causes the universe to pop out of nothing? No cause is needed.⁴⁸

This theory falls into the category of quantum gravity models.⁴⁹ In the theory of quantum creation the emergence of the universe is described by the laws of quantum mechanics and compared to a tunneling of the particles into existence out of the quantum fluctuation of the electric field in the vacuum.⁵⁰ In the quote above, Vilenkin uses quantum mechanics to talk about probability of the appearance of the universe “out of nothing.” But it seems unreasonable to talk about the laws apart from something that is governed by these laws. As McGrath rightly notice, “After all, laws themselves do not create anything, in that they are merely a description of what happens under certain conditions.”⁵¹ What is called “nothing” by Vilenkin is not nothing but a particular system that is described by a particular laws that govern this system.⁵² Talking about quantum creation theory, Stephen Barr writes, “Let us look at the ‘no-universe state’ that precedes (if we may use that word) the appearance of the universe. In a rather obvious sense the no-universe state is not really ‘nothing.’ It is a state! It is a specific ‘state’ of a specific, complicated quantum ‘system.’”⁵³ The “nothing” of the doctrine of *ex nihilo* creation claims that there is no “system”

⁴⁶ Vilenkin, “The Beginning of the Universe”, 6.

⁴⁷ Polkinghorne, *Science & Theology*, 35.

⁴⁸ Vilenkin, “The Beginning of the Universe.”

⁴⁹ Ibid.; Copan and Craig, *Creation out of Nothing*, 229-240.

⁵⁰ Vilenkin, “The Beginning of the Universe”; Stephen M. Barr, *Modern Physics and Ancient Faith* (Notre Dame, Indiana: University of Notre Dame Press, 2003), 272-278.

⁵¹ McGrath, *Inventing the Universe*, 84; Also, Paul Copan and William Lane Craig do not think that “nothing” of Vilenkin’s model is really “absolute nothingness.” In Copan and Craig, *Creation out of Nothing*, 236.

⁵² Rubenstein, 505-507; Barr, 275-278.

⁵³ Barr, 277.

with its laws that would exist co-eternally with God. If there was a “system” of the “no-universe state,” it should have been created by God.

Vilenkin concludes, “A deep mystery remains. The laws of physics that describe the quantum creation of the universe also describe its evolution. This seems to suggest that they have some independent existence.”⁵⁴ This commentary shows that scientific essays sometimes may contribute to the metaphysical questions. Methodologically, scientists cannot go any further than make the conclusion that the universe had a beginning. As it has been shown, they may even formulate hypothesis on the process of the absolute origin on the basis of the laws that they discovered in the given space-time universe. But, if the creation is explained by the same laws of the created universe, than as Vilenkin points out those laws appear to be transcendent to the universe itself.

Quantum gravity cosmologies have some inconsistencies beside the problem of their being highly speculative.⁵⁵ If a particular system is eternally producing different kinds of universes, as Vilenkin may point out, then by now all these universes would have inevitably collided with each other given the eternal past of such systems. To avoid such conclusions, one has to admit the beginning of a system itself.⁵⁶ But, the most consistent model which is confirmed by physical observation is the cosmological model of the big bang. This points to some intriguing metaphysical questions. If universe is not eternally existent, why does it exist at all? What or who brought it into being? Or, in the case of the quantum creation scenario, who/what imposes laws onto this void and creates the system in which these laws would produce our universe? These questions find their answers in the Bible on the first page which boldly states, “In the beginning God created the Heaven and the Earth” (Gen. 1:1).

Conclusion

Given that the universe and the Bible are both sources of the divine revelation they potentially may verify each other’s interpretation. The present common interpretation of cosmogony of the universe states that it had a beginning a definite time ago. This conclusion is strongly affirmed by the number of scientific observations and discoveries such as the expansion of the universe and the microwave cosmic radiation.

Despite the fact that some theologians like Rubenstein, Walton and McFarland do not see that Genesis 1:1 supports the doctrine of creation *ex nihilo*, exegesis of this text shows that it does imply the doctrine although it does not explicitly state it. The meaning of the word “nothing” is not the same in theology and recent theories of quantum gravity. The “nothing” of quantum gravity is often “something” of philosophy. But this fact does not jettison the possibility of the convergence of cosmology and Christian theology because in both scenarios the absolute beginning is affirmed. Moreover the quantum creation hypothesis is admittedly lacks of empirical verification.

⁵⁴ Vilenkin, “The Beginning of the Universe.”

⁵⁵ For the critique of these theories see, Copan and Craig, *Creation out of Nothing*, 219-266; Craig and Sinclair, “The *Kalam* Cosmological Argument,” 101-201. They argue for the Standard Hot Big Bang model.

⁵⁶ Copan and Craig, *Creation out of Nothing*, 229-240.

Science is the sphere of human activity that is rapidly developing. It does not stand in one place, but is constantly moving proposing new ideas of the interpretation of the world. The case can be made however that its conclusions about the beginning of the universe will only be reinforced because the other divine revelation (i.e. Bible) confirms current scientific knowledge of the universe. Thus the model of absolute beginning finds its confirmation in the biblical doctrine of creation *ex nihilo* and can be complemented by the conclusion that science is not able to make, the conclusion that God is the ultimate cause of the universe.

Bibliography

General references

Craig, William Lane and Sinclair, James D. "The *Kalam* Cosmological Argument." In *The Blackwell Companion to Natural Theology*. Edited by William Lane Craig & J. P. Moreland. West Sussex, UK: Wiley-Blackwell, 2012.

Single author books

Barr, M. Stephen. *Modern Physics and Ancient Faith*. Notre Dame, Indiana: University of Notre Dame Press, 2003.

Barbour, G. Ian. *Religion and Science: Historical and Contemporary Issues*. New York, NY: Harper Collins, 1997.

_____. *When Science Meets Religion: Enemies, Strangers, or Partners?* New York, NY: HarperCollins, 2000.

Collins, S. Francis. *The Language of God: A Scientist Presents Evidence for Belief*. New York, NY: Free Press, 2006.

Collins C. John. *Genesis 1-4: A Linguistic, Literary, and Theological Commentary*. Phillippsburg, New Jersey: P&R, 2006.

Hamilton, P. Victor. *The Book of Genesis: Chapters 1-17*, NICOT. Grand Rapids, Michigan: Eerdmans, 1990.

Hawking, W. Stephen. *A Brief History of Time: From the Big Bang to Black Holes*. New York, NY: Bantam Books, 1988.

_____. *The Nature of Space and Time*. Princeton, N.J.: Princeton University Press, 1996.

Horton, Michael. *The Christian Faith: A Systematic Theology for Pilgrims On the Way*. Grand Rapids, MI: Zondervan, 2011.

Kaiser, B. Christopher. *Creational Theology and the History of Physical Science: the Creationist Tradition From Basil to Bohr*. Leiden, Netherlands: Brill, 1997.

McFarland, A. Ian. *From Nothing: A Theology of Creation*. Louisville, Kentucky: John Knox Press, 2014.

McGrath, Alister. *Inventing the Universe: Why We Can't Stop Talking About Science, Faith and God*. London, UK: Hodder & Stoughton, 2015.

_____. *Science & Religion: An Introduction*. Oxford, UK: Blackwell Publishers, 1999.

Polkinghorne, John. *Science & Theology: An Introduction*. Minneapolis, Minnesota: Fortress Press, 1998.

Walton, H. John. *Genesis 1 as Ancient Cosmology*. Winona Lake, Indiana: Eisenbrauns, 2011.

Westermann, Claus. *Genesis 1-11: A Commentary*. Minneapolis: Augsburg Publishing House, 1984.

Multiple authors books

Carlson F. Richard and Longman III, Tremper. *Science, Creation and the Bible: Reconciling Rival Theories of Origins*. Downers Grove, Illinois: IVP Academic, 2010.

Craig, William Lane and Smith, Quentin. *Theism, Atheism, and Big Bang Cosmology*. New York, NY: Oxford University Press, 1993.

Copan, Paul and Craig, William Lane. *Creation out of Nothing: A Biblical Philosophical, and Scientific Exploration*. Grand Rapids, Michigan: Baker Academics, 2004.

Genderen, van J. and Velema, W. H. *Concise Reformed Dogmatics*. Phillipsburg, New Jersey: P&R, 2008.

Journal articles

Copan, Paul. "Is Creatio Ex Nihilo a Post-Biblical Invention? An Examination of Gerhard May's Proposal." *Trinity Journal* 17, no. 1 (Spr 1996): 77-93.

Craighead, Houston A. "Quantum Physics, Big Bang Cosmologies, and God: An Argument from Contingency." *Perspectives in Religious Studies* 22, no. 2 (Sum 1995):149-163.

Mithany, Audrey and Vilenkin, Alexander. "Did the Universe Have a Beginning?" (April 2012). Accessed November 19, 2016. <http://arxiv.org/abs/1204.4658>.

Rubenstein, Mary-Jane. "Cosmic Singularities: On the Nothing and the Sovereign." *Journal of the American Academy of Religion* 80, no. 2 (Jun 2012): 485-517.

Vilenkin Alexander. "Creation of Universes from Nothing." *Physics Letters B* 117 (1982): 25-28.

Vilenkin, Alexander. "The Beginning of the Universe." *Inference: International Review of Science* 1, no. 4 (October 2015). Accessed November 19, 2016. <http://inference-review.com/article/the-beginning-of-the-universe>.

Weeks, Noel. "The Bible and the 'Universal' Ancient World: a Critique of John Walton." *The Westminster Theological Journal* 78, no. 1 (Spr 2016): 1-28.