

RATIO
CHRISTI

*Welcome to **Ratio Christi***



*at **Texas A&M***

Welcome!

Ratio Christi, meaning “reason for Christ” in Latin, serves to defend the Christian faith in honest dialogue with both our skeptical & believing friends.

Weekly Meetings: Thursday @ 8:30pm

RC-TAMU.org



Special Events

"God and Quantum Mechanics"

Fr. Robert Verrill, Baylor University

Feb 6 // 8:30pm // MSC 1400

"Veritas Forum: God and/or Evolution?"

Dr. Michael Behe, Lehigh University

Dr. Joshua Swamidass, Washington University in St. Louis

Feb 20 // 7:00pm // Rudder Theatre

"Why Is God So Hidden?"

Dr. Micah Green, Dept. of Chemical Engineering, Texas A&M

April 2 // 8:30pm // MSC 1400

Special Events

“How (Not) To Be Secular”

William Bondurant, Reformed University Fellowship at Texas A&M

April 8 (Weds) // 8:00pm // Location TBD

"History, Theology, and How Not to Confuse Them"

Dr. Daniel Schwartz, Dept. of History, Texas A&M

April 16 // 8:30pm // MSC 1400

RC-TAMU.org/Schedule

GOD and/or EVOLUTION?

DR. S. JOSHUA SWAMIDASS

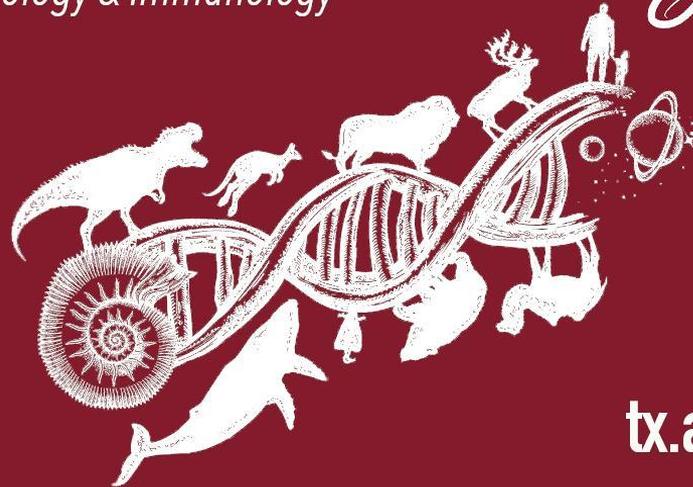
Washington University at St. Louis, Dept. of Pathology & Immunology

DR. MICHAEL J. BEHE

Lehigh University, Dept. of Biological Sciences

RUDDER THEATRE

FEB 20, 2020 at 7 PM



tx.ag/VERITAS2020

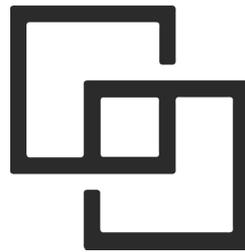
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Cosmological Arguments

~for God

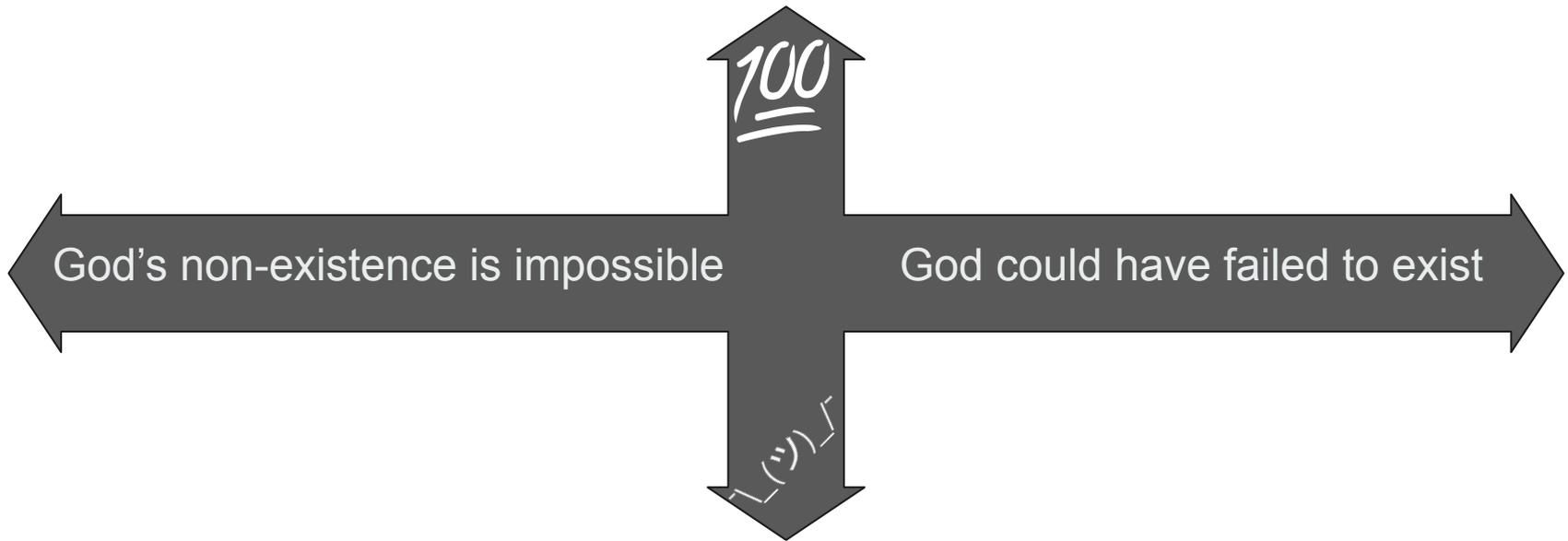
Is God the explanation for important features of the Universe?



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Room Game

What ?



	General Theism	Christian Specific
Positive (i.e. making the case)	Reasons why God exists	Reasons why Christianity is true
Defensive (i.e. responding to objections)	Responses to arguments for atheism	Responses to arguments against Christianity

	General Theism	Christian Specific
Positive (i.e. making the case)	<ul style="list-style-type: none"> • Arguments for God's Existence • Cosmological • Teleological • Moral Argument • Ontological Argument 	<ul style="list-style-type: none"> • New Testament Textual Transmission • Historical Argument for the Resurrection • Reliability of the Bible • Uniqueness of Jesus • Undesigned Coincidences
Defensive (i.e. responding to objections)	<ul style="list-style-type: none"> • Problem of Evil • Divine Hiddenness • Incoherence of theism 	<ul style="list-style-type: none"> • Science vs Faith (e.g. Evolution) • Historical Errors in the Bible • Scientific Errors in the Bible • Contradictions in the Bible • Moral Objections to Biblical Stories • Religious Pluralism vs Particularism

Natural Theology

is the program for inquiring

- by the light of **natural** reason alone
- into whatever truths human beings might be able to find about God.

Theology and natural theology **differ**

- in what they inquire into, and
- in what manner they inquire.

<https://www.iep.utm.edu/theo-nat/>

Christian Apologetics?

Acts 17:1-4 – “He **reasoned with them** from the Scriptures, explaining and proving ...”

Acts 17:22-34 – “He has **given proof** of this by raising him from the dead”

Acts 26:24-29 – “What I am saying is **true and reasonable**”

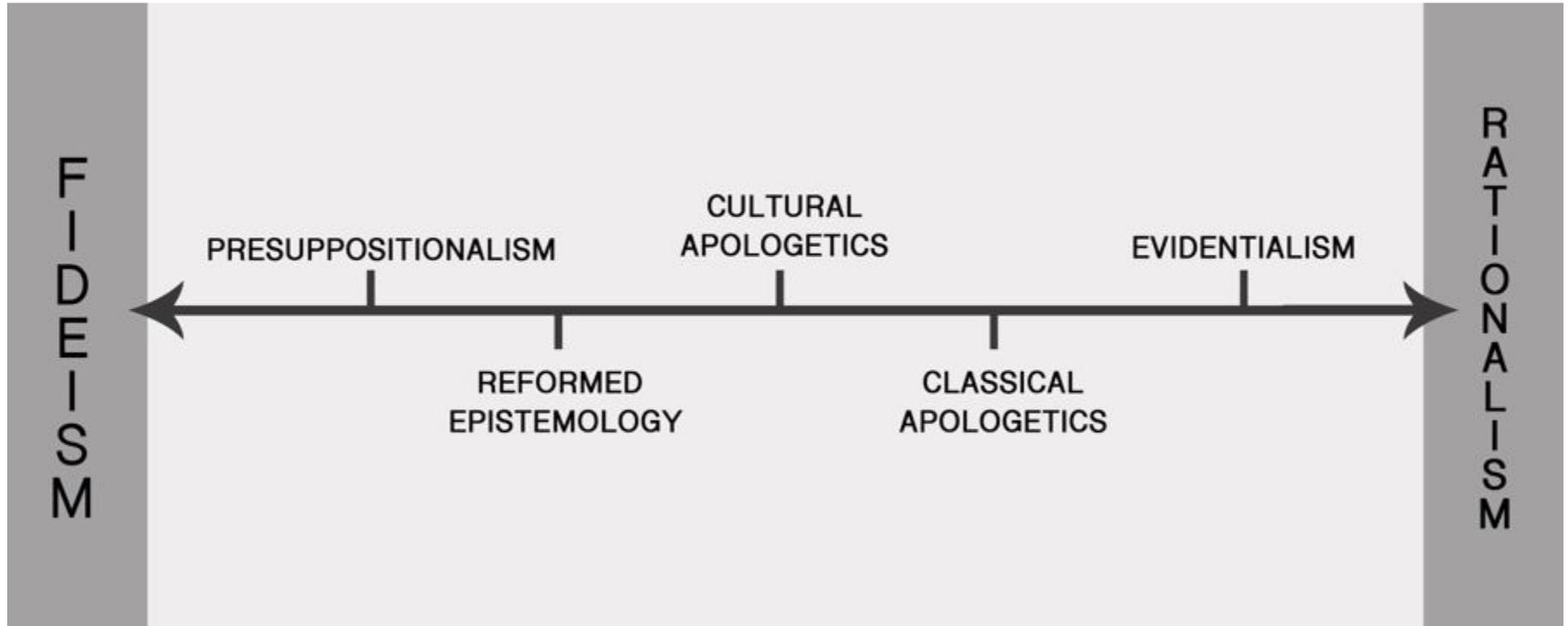
Romans 1:18-20, 2:14-15 – “what may be known about God ... God has made ... plain to them”

2 Corinthians 10:3-5 – “**We demolish arguments** ... and we take captive every thought”

Philippians 1:7, 16 – “**defending** and confirming the gospel”

1 Peter 3:13-16 – “Always **be prepared to give an answer** for the hope that you have”

Apologetics



Apologetics

1. Is it ok to argue outside/without the Bible?
2. Is reason set against faith?
3. Is the human mind warped by sin?

“Arguments”

Natural theology (and philosophy in general) is often focused on so-called “arguments”

- **Don’t** confuse these arguments with “**bickering**” or “**being argumentative**”
- An argument is a **reasoned, logical** written or verbal **statement** intended to **persuade another person** that something is true

What makes a good argument?

1. **Validity:** The structure is appropriate (conclusion follows from the premises)
2. **Soundness:** The premises are likely true
3. **Persuasiveness:** The argument is convincing

Premises of an argument should be more probable than their negation

Basic Formal Arguments

There are 3 general types of formal arguments

1. Deductive Arguments
 - a. Premises lead infallibly to a conclusion
2. Inductive Arguments
 - a. Premises support a conclusion
3. Abductive Arguments
 - a. Reasoning to the best explanation

Cosmological Arguments

- A cosmological argument takes some cosmic feature of the universe ... that calls out for an explanation and argues that this feature is to be explained in terms of the activity of a First Cause, which First Cause is God.
- A typical cosmological argument faces four different problems. If these problems are solved, the argument is successful.
 1. Glendower Problem
 2. Regress Problem
 3. Taxicab Problem
 4. Gap Problem

Glendower Problem

- Features may seem to *call* for explanation
- But how do we know such an explanation exists?
 - Usually this requires a causal or explanatory principle

Glendower: I can call spirits from the vasty deep.

Hotspur: Why, so can I, or so can any man; But will they come when you do call for them?

(Shakespeare 2000, p. 59)

Regress Problem

- How do we treat an infinite regress of causes or explanations?
 - David Hume claimed that an infinite regress of explanations would sufficiently explain everything in the regress without a first cause

Taxicab Problem

- How is the principle used to defeat the Glendower problem applied to the first cause?
 - What caused God?
- Usually requires identifying a non *ad hoc* difference between the first cause and the rest of reality.

Gap Problem

- Even if there is a first cause, does that have any religious significance?
 - Is the first cause God?

Cosmological Arguments

There are three types of cosmological arguments

1. **Kalam** (the space-time universe began to exist)
2. **Thomistic** (the universe must have a ground to its being)
3. **Leibnizian** (the universe requires an explanation for its existence)

These arguments have been supported by many of the most important philosophers:

Plato, Aristotle, ibn Sina, al-Ghazali, Maimonides, Anselm, Aquinas, Scotus, Descartes, Spinoza, Leibniz, Locke

Differences in Cosmological Arguments

- The different arguments are mainly distinguished between their treatment of the Glendower and Regress problems

	Glendower	Regress
Kalam	Propose a cosmic principle	Argues that past is finite
Thomistic	Propose a cosmic principle	Argues there must be a non-intermediate cause
Liebniz	Principle of sufficient reason***	Infinite chain of causes without first cause fails to explain <i>the whole chain itself</i>

***there are also formulations based on non-local causal principles

Dominoes vs. a House of Cards

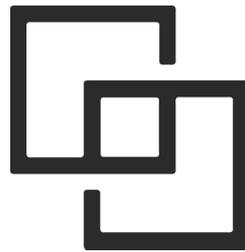
- Kalam is like dominoes
- Leibniz is like a house of cards





What **EXPLAINS** *the existence of* **REALITY**

The Leibnizian Argument from Contingency



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Definitions

- Necessity: A being's existence is metaphysically necessary if it cannot fail to exist; the being exists in all possible worlds.
- Contingency: A thing is *contingent* if it could have failed to exist. For example, the Earth's existence is contingent. It exists but it could have failed to exist (indeed, at one point the Earth didn't exist). The explanation of a contingent thing's existence is an external cause.

Definitions

- Principle of sufficient reason
 1. Every true proposition has an explanation.
 2. Every contingent true proposition has an explanation.
 3. Everything that exists has an explanation for its existence.

Argument *(a la Bill Craig)*

1. Everything that exists has an explanation for its existence, either
 - a) in the necessity of its own nature or
 - b) in an external cause (i.e. it is contingent).
2. If the universe has an explanation for its existence, that explanation is what we call God
3. The universe is an existing thing.
 - From 1 and 3 it follows: The universe has an explanation of its existence
 - From 2 and 4 it follows: The explanation for the existence of the universe is

P1. Everything that exists has an explanation for its existence

- This is formulation of what is commonly known as the principle of sufficient reason (PSR) which undergirds all of scientific and philosophical inquiry. Both fields have an insatiable thirst for explanation. To deny this principle would be to take an immensely anti-intellectual position, that is, that some things exist for absolutely no reason.

Objection 1

- **OBJECTION:** If everything has an explanation for its existence, then surely God has an explanation for his existence. But, nothing is greater than God so he can't have an explanation and therefore, P1 is false.
- **RESPONSE:** God is not exempt from the need of an explanation. There are two types of beings in things, necessary ones and contingent ones. A necessary being is one who exists by a necessity of its own nature, that is, it is impossible for this entity to fail to exist. A contingent being is one whose exists in virtue of an external cause. It cannot exist without depending on something else for its existence. God's existence is one of necessity.

Objection 2

- **OBJECTION:** This is true for everything in the universe but it is not true of the universe.
- **RESPONSE:** This is what is sometimes nicknamed the “taxi cab fallacy” (related to special pleading). That is, a premise is accepted until the conclusion is reached and then dismissed. To dismiss the PSR once one reaches the destination of the universe would be arbitrary and even unscientific. The entire field of cosmology would become a frivolous pursuit. The burden of proof is assumed to demonstrate why the universe in particular is unique in its exemption from the PSR. Remember, as demonstrated in the previous objection, the theist is not exempting God from the PSR.

Taxicab Fallacy (Richard Taylor?)

- Imaging you are walking in a forest
- You find a glowing ball
- Does its presence require an explanation?
- Imagine the ball is now the size of a city
- Does its presence require an explanation?
- Even if its size increases to the size of the universe, does it require an explanation?

Objection 3

- **OBJECTION:** The universe cannot have an explanation. The universe is everything that exists. To have an explanation, there would have to be a state of affairs wherein the universe did not exist, but, that would be nothingness. Therefore, the universe simply exists inexplicably.
- **RESPONSE:** This is simply question-begging. The objection presupposes naturalistic atheism that is, the physical world is a maximal description of reality. Also, this objection is an implicit assertion of the next premise in the argument.

P2. If the universe has an explanation, that explanation is God

- This statement has the same logical content as a common atheist response that has already been previewed: **“If atheism is true, then the universe has no explanation”**. Since naturalism assumes that there is no reality outside of the material universe, then the state of affairs where there was nothingness from which the universe came into being necessitates that the occurrence is inexplicable. Notice how the same truth value applies to the statement “If the universe has an explanation, then atheism is false.” which is essentially identical to (2). Therefore, by affirming the inexplicable existence of the universe, the naturalist also affirms the truth value of (2).
- By the nature of the case, (2) stands on its own right as plausible, independent of implicit admittance from the atheist. Consider the composition of the universe: all of matter, energy, space, and time. If there were an explanatory cause of the universe, it must be transcendent to these entities. A timeless, spaceless, immaterial, and personal entity that is causally active coincides nicely with the classical understanding of God.

Properties of the *cause*:

Solving the gap problem

1. Necessity

- Otherwise it would need a cause...

2. Agency

- A necessary existing cause necessarily produces its effect... unless its an agent

3. Timeless/spaceless/immaterial

- Since it created the universe

Objection 1

- OBJECTION: The universe does have an explanation: the necessity of its own being.
- RESPONSE 1: Evidence against the universe's necessity: It is logically possible that the composition of the universe could have been an entirely different set of quarks/strings/units. For example, think about your chair. Is it possible that your chair could have been made out of ice? Not that your chair would look identical to the way it is now and just composed out of ice, rather, your actual chair. The answer is no. You would have a different chair, an ice chair. Likewise, the universe could have been composed out of a different set of quarks/units and it would've been a different universe even if it were in the same shape. Since it is not necessary that our universe is made out of the current arrangement of quarks/units, then the universe cannot exist necessarily.

Objection 1

- RESPONSE 2: Evidence for the universe's contingency: The BVG Theorem demonstrates that any universe that is on average in a state of expansion cannot be past eternal. However, necessary beings are entities which are eternal in nature and have no beginning to their existence (e.g. Suppose numbers are necessary. When did "1" begin to exist? Before humanity existed, there was still one sun in this solar system, only one universe, etc.) This counter-argument can be summarized as follows:
 - (1) - If a thing is necessary, then it is eternal.
 - (2) - The universe is not eternal
 - (3) - The universe is not a necessary thing [1,2 modus tollens]
 - (4) - Everything is either a necessary thing or a contingent thing. [PSR]
 - (5) - The universe is a contingent thing [3,4 disjunctive syllogism]

Objection 2

- OBJECTION: Part of the universe is necessary and the rest of it is contingent.
- RESPONSE: There is currently no evidence to support that any kind of matter/energy exists by necessity. Furthermore, there doesn't seem to be a place for any kind of necessarily existing matter. As the expansion of the universe is traced backwards, a singularity is reached wherein the universe is so small, not even subatomic particles could exist.

Objection 3

- OBJECTION: The universe is contingent, but, it's necessary that something exists. For example, It's necessary that a geometric shape has a number of sides, but, no particular number is necessary
- RESPONSE 1: It doesn't seem clear that it is logically necessary that something exists. There isn't any logical contradiction in a possible world wherein no contingent things exist.
- RESPONSE 2: Absurdity ensues. There is no combination of propositions about the non-existence of various things that would plausibly entail that anything exists. For example, conjoining the propositions "cows do not exist, spaghetti does not exist, protons do not exist, etc." out to every broadly logical entity except for a purple velociraptor *does not* necessitate that such a velociraptor exists. The same goes for a unicorn, a fairy, or a universe.

Objection 4

- **OBJECTION:** God can't be the cause of the universe because you define God as necessary. Necessary causes bring about necessary effects. Therefore, either the universe is necessary because God is necessary or the universe is contingent and God, being necessary, is not the explanation.
- **RESPONSE:** It doesn't seem to be apparent that necessary beings produce necessary effects necessarily. Even so, God, as a personal being, is endowed with volition. While his existence is necessary, and the case could be made that his knowledge of all possible worlds is also necessary, the actualization of any particular world is contingent upon what he freely wills.

P3 The universe is an existing thing

- Can you really deny this?

Argument *(a la Bill Craig)*

1. Everything that exists has an explanation for its existence, either
 - a) in the necessity of its own nature or
 - b) in an external cause (i.e. it is contingent).
2. If the universe has an explanation for its existence, that explanation is what we call God
3. The universe is an existing thing.
4. From 1 and 3 it follows: The universe has an explanation of its existence
5. From 2 and 4 it follows: The explanation for the existence of the universe is God

Conclusion

- The contingency argument answers the most fundamental question:
 - *Why does anything at all exist?*
- If the universe has a cause, that cause must possess many of the traditional properties of the theistic God
- This argument does not rely on science

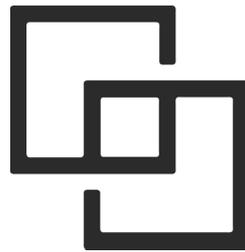
Further Reading

- On Guard (William Lane Craig) ch. 1 [Beginner]
- Reasonable Faith (William Lane Craig) ch. 3 [Beginner]
- How Reason Can Lead to God (Joshua Rasmussen) [Beginner]
- The Leibnizian Cosmological Argument, in Blackwell companion to Natural Theology (Alexander Pruss) [Advanced]
- Defenders Podcast, Excursus on Natural Theology (Part 5): The Argument from Contingency
- <https://plato.stanford.edu/entries/cosmological-argument/#TypoCosmArgu>



Does the **Big Bang** *prove* **God?**

The Kalam Cosmological Argument



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History of the *Kalam* Cosmological Argument

“The kalam cosmological argument traces its roots to the efforts of early Christian theologians who, out of their commitment to the biblical teaching of creatio ex nihilo, sought to **rebut the Aristotelian doctrine of the eternity of the universe**. In his works *Against Aristotle* and *On the Eternity of the World against Proclus*, the Alexandrian Aristotelian commentator John Philoponus (d. 580?) ... initiated a tradition of argumentation in support of the doctrine of creation based on the **impossibility of an infinite temporal regress of events** (Philoponus 1987; Philoponus & Simplicius 1991). Following the Muslim conquest of North Africa, this tradition was taken up and subsequently **enriched by medieval Muslim and Jewish theologians** before being transmitted back again into Christian scholastic theology.²”

-*The Blackwell Companion to Natural Theology*. Edited William Lane Craig and J. P. Moreland

History of the *Kalam* Cosmological Argument

In his *Kitab al-Iqtisad*, the medieval Muslim theologian **al-Ghazali** presented the following simple syllogism in support of the existence of a Creator:

- Every being which begins has a cause for its beginning;
- Now the world is a being which begins;
- Therefore, it possesses a cause for its beginning (al-Ghazali 1962, pp. 15–6).

In defense of the second premise, Ghazali offered various philosophical arguments to show the impossibility of an infinite regress of temporal phenomena and, hence, of an infinite past.

The limit at which the finite past terminates Ghazali calls “the Eternal” (al-Ghazali 1963, p. 32), which he evidently takes to be a state of timelessness. Given the truth of the first premise, the finite past must, therefore, “stop at an eternal being from which the first temporal being should have originated” (al-Ghazali 1963, p. 33).

Introduction

If the universe had a beginning in time,

Does that mean that God must have created it?

Discussion points:

- What does it mean to begin to exist?
- Did the universe begin to exist?
 - Is there philosophic evidence?
 - Is there scientific evidence?
- What was the cause of the universe?



Definitions

- **God:** The god of theism (Christianity, Judaism, Islam)
 - Omniscient, Omnipotent, Omnibenevolent
- **Cause:** Two events (A and B) can be said to stand in a causal relationship if A provides the **necessary** and **sufficient** conditions for B
- **Time:** Any two events with an earlier than/later than relationship are separated by time
- **Event Causation:** In event causation, the effect is always present if the cause is present
- **Agent Causation:** in agent causation, “will” is involved, the cause can be present without the effect until such a time as the agent chooses.

Kalam Cosmological Argument (v2.0)

- P1) If the universe **began to exist**, it has **a cause to its existence**
- P2) The universe **began to exist**
- C) Therefore, the universe has **a cause to its existence**

P2) The Universe Began to Exist

There are 2 general ways to show the universe began to exist

1. Philosophical Argument
2. Scientific Confirmation

1st Philosophical Argument

The impossibility of an actual infinite number of things existing

- If the universe did **not** begin to exist, then it has **existed forever**
- If the universe has **existed forever**, then there has been an **actual infinite** number of past events
- But, an **actual infinite** number of things **cannot exist**
- Therefore, the universe **began to exist**

Infinity... and Beyond?

There are two general mathematical senses of the word “infinity”

- Potential infinite (∞)
- Actual infinite (\aleph)

Mathematical Ontology

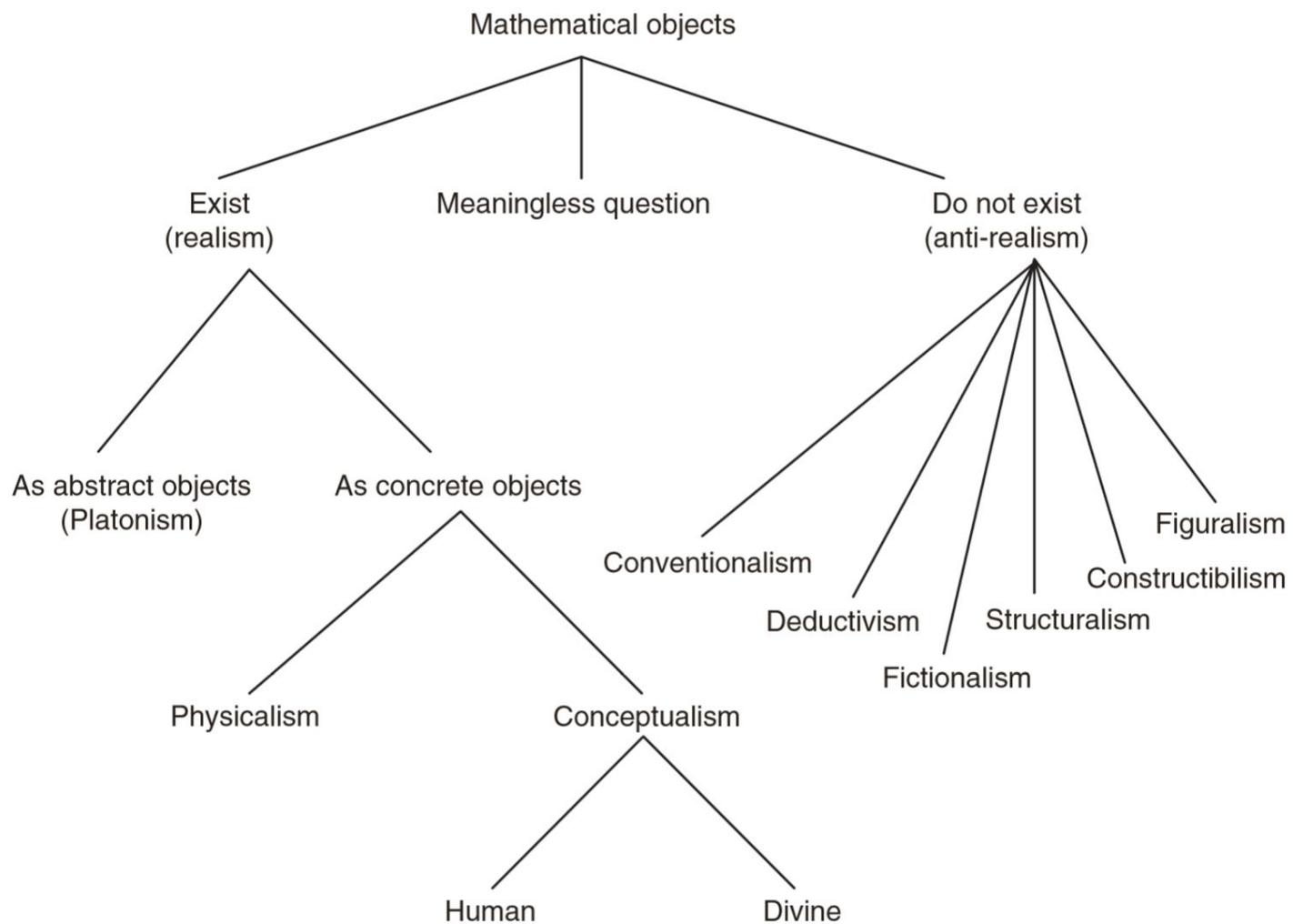


Figure 3.1 Some metaphysical options concerning the existence of abstract objects.

Actual Infinities Cannot Exist in Reality

David Hilbert made a famous illustration.

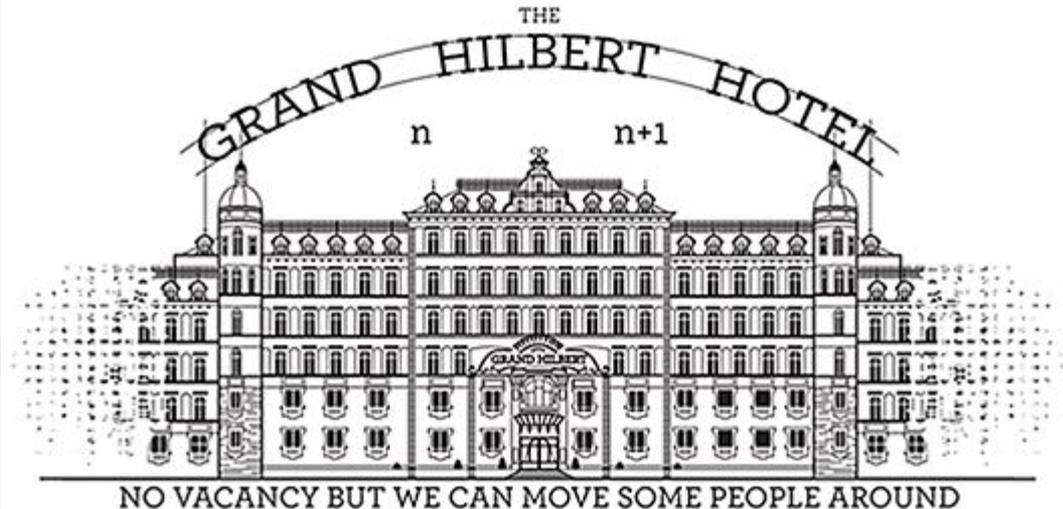
Imagine a hotel with infinite rooms.

All the rooms are full, but a guest comes to the counter.

No problem! Each person in the hotel changes rooms ($n+1$) leaving room 1 empty

Next an infinite number of guests arrives.

No problem! Each person in the hotel changes rooms ($2 \cdot n$) leaving every odd room empty!



2nd Philosophical Argument

The impossibility of forming an actual infinity through successive addition

- A collection formed by successive addition cannot be an actual infinite.
- The temporal series of events is a collection formed by successive addition.
- Therefore, the temporal series of events cannot be an actual infinite.

Theories of Time

The **temporal series of events** is a **collection formed by successive addition**.
This seems obvious... but depends on your theory of time:

A Theory: Temporal becoming is real

B Theory: 4D Space-time manifold

Adding to Infinity

Imagine a person counting down from infinity;

When do they get to 0?

Consider two planets orbiting a star from infinity past. Planet 1 orbits twice per year, planet 2 orbits once per year.

Has planet 1 orbited more times than planet two?

Have they completed an even number or an odd number?

Scientific Evidence (expansion of the universe)

Alexander Friedmann and the Belgian astronomer Georges Lemaître were able to formulate independently in the 1920s solutions to the field equations which predicted an expanding universe (Friedmann 1922; Lemaître 1927).

$$H^2 = \left(\frac{\dot{a}}{a} \right)^2 = \frac{8\pi G}{3} \rho + \frac{\Lambda}{3} - \frac{k}{a^2},$$

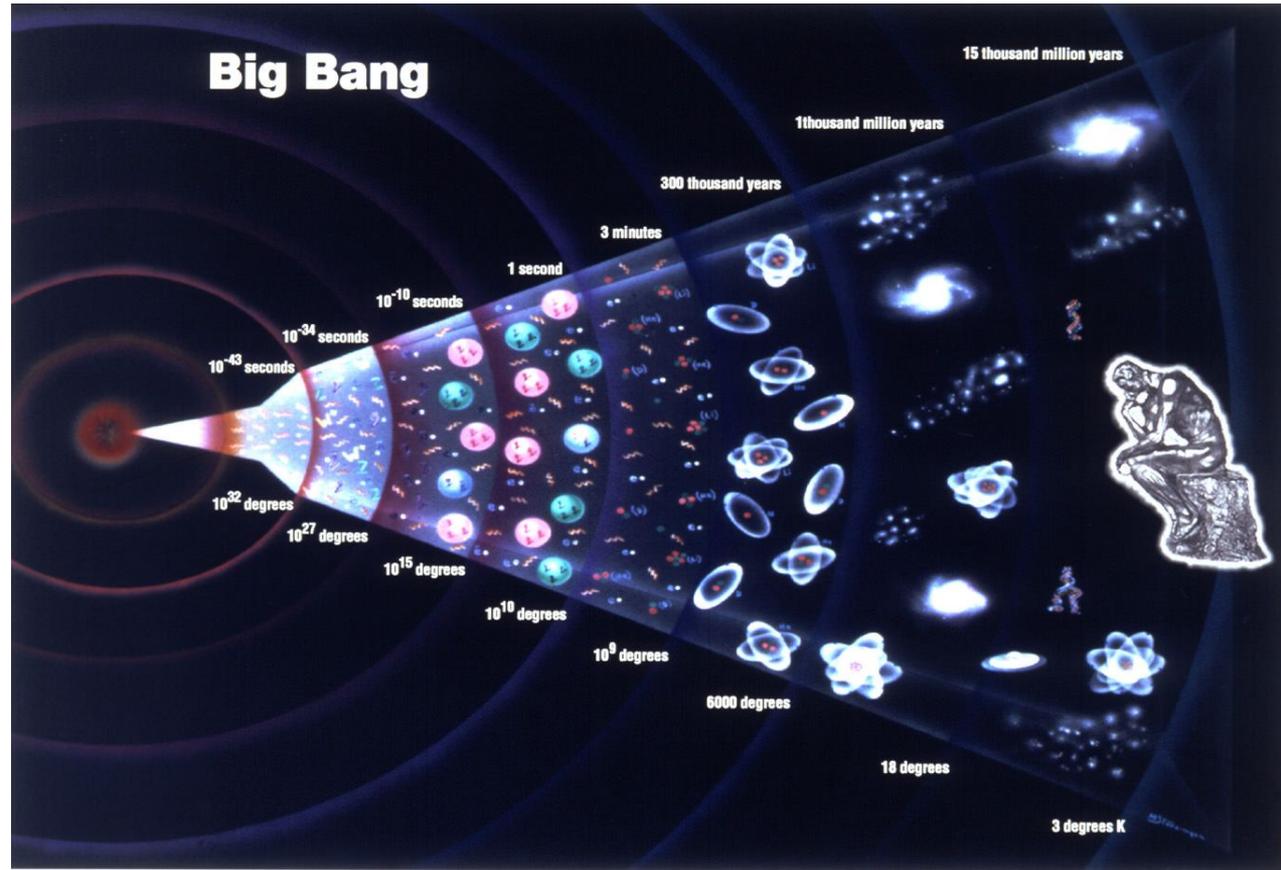
Finitude of the past

The so-called “Big Bang” model of the universe predicts an absolute beginning of space and time.

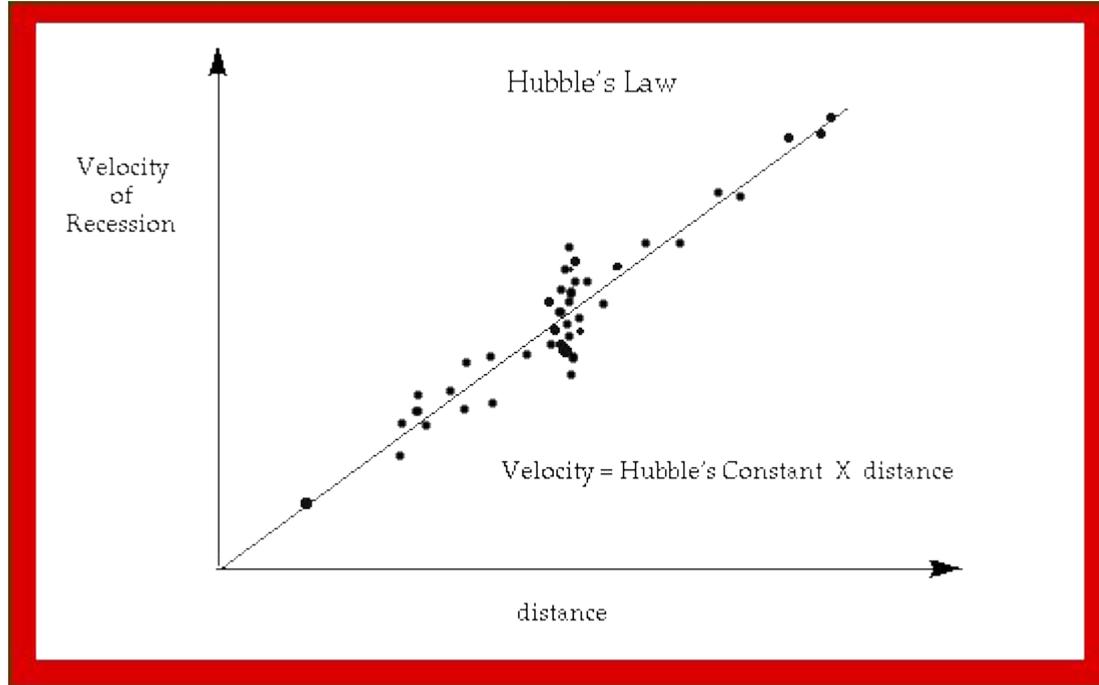
c.f. P.C.W Davies, “Spacetime Singularities in Cosmology,” in *The Study of Time III*

John Barrow and Frank Tipler, *The Anthropic Cosmological Principle*. Oxford 1986

J. Richard Gott III, James E. Gunn, David N. Schramm, and Beatrice M. Tinsley, “Will the Universe Expand Forever?” *Scientific American*. March 1975, 65



Confirmation



In 1929, Edwin Hubble showed that stars and galaxies were rapidly moving away from us, and that the further away they were, the faster they were receding.

Alternative Models

Steady State Model

The universe is in a constant expansion, but new matter is created between galaxies to maintain a steady state.

No evidence supports the theory. Observation tends to contradict.

Cosmic microwave background radiation and primordial synthesis of light elements killed this theory

Alternative Models

Oscillating Models

Russian cosmologists in the 1960's suggested that the universe might not coalesce into a point, but may oscillate; expanding and contracting into the infinite past.

The Hawking Penrose Singularity Theorems disprove this theory by showing that an initial singularity is guaranteed for very general conditions and cannot be avoided.

Additionally, current evidence shows that the universe will not contract, but continue expanding indefinitely, in fact accelerating.

Alternative Models

Vacuum Fluctuation Models

In the subatomic realm, so-called “virtual particles” arise spontaneously out of the quantum vacuum. In these models, the universe is conceived as an eternal quantum vacuum, and our observable universe is just a fluctuation in that vacuum.

These models were abandoned in the 1980's due to significant internal incoherencies. For example, given its infinite past, every point in the wider universe should have spawned a universe, thus our universe should have collided with many other universes.

Alternative Models

Chaotic Inflationary Models

Alternative Models

Quantum Gravity Models

Alternative Models

Strings?

BVG Theorem

Borde, and Vilenkin (1993) demonstrated that;

“A model in which the inflationary phase has no end . . . naturally leads to this question: Can this model also be extended to the infinite past, avoiding in this way the problem of the initial singularity? . . . this is in fact not possible in future-eternal inflationary spacetimes as long as they obey some reasonable physical conditions: such models must necessarily possess initial singularities. . . . the fact that inflationary spacetimes are past incomplete forces one to address the question of what, if anything, came before.[10]

Their work was extended (Borde, Guth, and Vilenkin, 2003) to “close the door” and show that any universe on average expanding must be finite in the past.

Kalam Cosmological Argument (v2.0)

- P1) If the universe **began to exist**, it has **a cause to its existence**
- P2) The universe **began to exist**
- C) Therefore, the universe has **a cause to its existence**

P1) If the Universe began to exist, it has a cause

Is this more true than its negation?

The principle of sufficient reason!

If the universe can pop into existence uncaused out of nothing, why doesn't anything else?

Wrap-up (Conclusions)

If the universe had a beginning in time,

Does that mean that God must have created it?

There are independent philosophic and scientific reasons for believing that the universe began to exist.

That the beginning of the universe requires a cause or explanation of its beginning to exist seems obvious.

But is this cause God?



What are the properties of the Cause?

Further Reading

Apologetics

1. <https://www.bethinking.org/apologetics/an-introduction-to-christian-apologetics>
2. Five Views on Christian Apologetics
3. J. P. Moreland, Love Your God With All Your Mind

Kalam

1. William Lane Craig. Reasonable Faith. Crossway
2. Philosophical Foundations of a Christian Worldview. Ed. William Lane Craig, J.P. Moreland
3. The Blackwell Companion to Natural Theology

Listening

1. Defenders Podcast. Defenders 3: Excursus on Natural Theology (Part 8- Part 13)