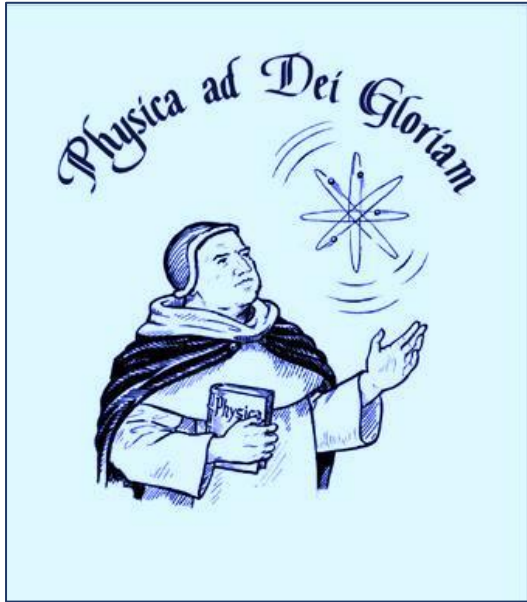


Science before Science Study Group

Week Sixteen



*St. Thomas Aquinas,
Pray for us.*

*St. Albert the Great,
Pray for us.*

Prayer before Study

Almighty God, You who are the creator of all things and our loving Father, send us Your Holy Spirit to illuminate our minds so that we can understand how You have revealed Yourself to us through the world around us.

Grant to us
keenness of mind
capacity to remember,
skill in learning,
subtlety to interpret,
and eloquence in speech.

May You guide the beginning of our work, direct its progress, and bring it to completion.

We ask this through Thy Son, Jesus Christ, Our Lord.

Amen



No Need for a God

- St. Thomas lays out argument against God's existence
 - It is superfluous to propose something that a few principles can account for
 - Natural things can be accounted for by nature
 - All voluntary things can be reduced to human will
- Modern objections – Carl Sagan
 - “At least so far: a universe with no edge in space, no beginning or end in time, and nothing for a creator to do”
 - Misinterpretation of the empiriometric but underneath the same objection as St. Thomas put forward
- These objections don't need modern science for their formulation or for the answer
- St. Thomas' Qunique Via – the five proofs of the existence of God

St. Thomas – Five ways to demonstrate God's existence

- First – based on fact that all things change
- Second – based on that things need a cause
- Third – based on possibility and necessity
- Fourth – based on degrees of intelligibility
- Fifth – based on the order of things

All of these proofs contain the fundamental science that we have learned in this course

First Proof - Change

- Change is all around us – everything we know comes through the senses and that involves a physical change
- Principle of causality – nothing changes itself
- Moderns rely on empiriometric (e.g. quantum mechanics) - everything is a process
 - Correct in noting that change occurs – small and large levels
- Change is reducing something from potentiality to act
 - This means nothing changes itself – the principle of causality
 - Separate changer must change something that changes
 - Thus a complicated net of changes

First Proof - Continued

- Three possibilities
 - Infinity
 - Like a chain hanging from the sky
 - Pushes off an explanation
 - One cannot explain something by avoiding it!
 - Circle
 - Accounts for change as it occurs but not in the whole
 - Beginning
 - First mover that is at the bottom of all change
 - Requires a cause that has no potential – pure act
 - Must be immutable (unchangeable)
- Only the last proposition is rational
- There must be a first mover or changer
 - It must be unchangeable or immutable or else we must search for a further changer
 - Something must be pure act and have no potentiality
 - Pure act = Pure being

Second Proof – Efficient Cause

- Efficient cause is what brings about an effect
 - Ball flies over home plate – someone threw it
 - Meteor changes velocity – something changed it
 - Book was written – author wrote it
- Everything that happens proceeds from a cause
 - Nothing can be cause of itself
 - Otherwise, as St. Thomas says, it would be prior to itself
 - Infinite series of causes
 - Leaves all causes as intermediate; leaving them no cause
 - Causes acting now and their effects would not exist
- There is a cause that is uncaused

Third Proof – Possibility and Necessity

- We observe that things come into existence and go out of existence
- It is impossible for things to always exist
- It is possible for things not to be
- If all things were possible then at some time there could have been nothing in existence
- If that were the case then nothing would exist since something cannot come from nothing – but that contradicts the fact that we are here
- Everything cannot be in this condition of being possible
- Every necessary thing has its necessity caused by another or not
- As with the previous two proofs you cannot go indefinitely with necessary beings but must arrive at a being who has its own necessity

Analogy and Metaphor

- Metaphor

- Parallel relationships

- E.g. “St Thomas’ mind flies to the answer like an eagle to the top of a mountain”
 - Eagle and mountain are not connected to St Thomas’ mind – but it helps the mind understand

- Analogy

- Real relationship

- In between univocal and equivocal
 - We discussed this in the early part of the course
 - Healthy is used in many ways - its primary use is in indicating the patient is healthy – an analogous use is ‘the food is healthy’ – referring to making the patient healthy

Fourth Proof - Intelligibility

- Some things are more or less intelligible (true), beautiful, unified (one), good (these are the transcendentals).
 - Don't belong exclusively to any one thing but to all things
 - Of two things, one is more or less intelligible than the other
 - None of the things that we have direct knowledge of has any of these transcendentals to perfection
- Goodness
 - Evil is its opposite but evil is a privation (being of reason) and not a real being (used in comparison)
 - Blindness is a privation of sight (if there were not animal with sight then there would be no privation)
 - The less something is the less privation it can have and therefore less evil (less ability for disorder and less privation that can occur)
 - An atom is less good than man (but this does not make it evil)
 - The degree to which something is good is the degree to which *it is*
- No-thing is pure goodness – i.e. having all goodness
 - A being has goodness from itself or from another
 - Any lack of goodness implies a reference to another
 - Only God has complete goodness from which the other things participate in
 - Same argument applies to the other transcendentals
 - Therefore God is Supreme Being having every perfection of the transcendentals

Fifth Proof – Order of Thing

- There is an order of potency to act
 - Hydrogen and oxygen behave the same way each time there are exposed to a spark
 - Order in the world is undeniable
 - Things cannot act for an end unless there is an intelligence guiding them
 - Foreordination – ordained before they happen
 - Foreordination cannot be in things themselves - that would be giving them something they don't have
 - Must exist in the mind of another being – an intellect
 - God is pure intellect

The Empirioschematic Sciences

- Empirioschematic Science
 - Do not rely on mathematics as does modern physics (empiriometric)
 - It relies on observations and experiments
 - Creates beings of reason in a world that is parallel to the ontological
 - Problem becomes the differences between the beings of reason and reality
 - Interested only in material causes
 - Why? Because of its predictability
 - Can take averages and get stable answer that will be the effects from various real beings
 - Being of reason will replace the real being

The Empirioschematic Sciences

- How does the empiriological include the immaterial? Chance.
 - Anything outside of the schema will appear as sort of irrationality – this is chance
- Immaterial effects implicitly included in schema
 - Either not recognized as different if they tend in the direction
 - Or if they are outside the schematic is considered 'chance'
 - Chance is irrationality – it means there is no reason
- Like the empiriometric manifests underlying real being but hides the real being in some ways

Evolution

- Assume scientists have done their work correctly – what does evolution mean ontologically
- Evolution states
 - The world began and gradually more and more complex substances developed
 - Atoms, stars, galaxies; our sun and solar system; then later simplest forms like proteins and eventually simple life; plants and animals (philosophical terms); more complex and then finally man; some things survived and others didn't (like dinosaurs)
 - Each phase introduces new things
 - Rock versus atom
 - Plant versus rock
 - Animal versus plant
 - i.e. actual being with new forms
 - Where are these new beings coming from? Two answers-
 - **First:** They are already in matter *in a hidden way* from the beginning
 - **Second:** (A less general way since it only applies to life) – *the action of God* – God super-performing action bring the first life form into being
 - Take the first way:
 - Electron and proton – brought together in the right way will form hydrogen
 - Electron and proton are both different forms and hydrogen yet a third form whether does this new form come from? Electric field, electron and proton act in complimentary ways that activates different potencies giving rise to the new form (actuality)

Evolution (continued)

- Crossing from the organic to life
 - There is nothing in the material universe in act in any way like nutritive life
 - Life sustains itself by immanent action (action from the whole)
 - *There is no substance that is ordered toward growth, maintenance and reproduction of others of its kind in the inanimate universe*
 - Remember: nothing can change itself; something can act only as far as it is in act.
 - There must be an outside agent
 - It is not that something is being created in the sense of ex nihilo or from nothing; the material is there
 - Matter has the potential to become living things (because they are here!)
 - What activated the life potentiality towards which the universe moves as it cools?

Evolution (continued)

- Forced to consider the second way mentioned in the last slide
 - Action of God – that does not appear until life can appear
 - After many years of inanimate evolution – matter is brought to the point of calling for the first life form
 - This action ‘automatically’ brings the first life form into being
 - The potencies are there in the matter at the first moment
 - This is no way is an interference of God in creation
 - God bound Himself to make this action necessary

Evolution (continued)

- Evolution of life forms
 - Environment acts on this simple new life form – minute changes and modifications result that are the actualization of potentials that are realizable because of the presence of the new form.
 - At some point a member of the strain reaches a point where it can receive a new form – that of a second species
 - The supeforming action of God automatically brings the new form into being
 - This continues and the branch of form and spread

Evolution (continued)

- Evolution of man
 - At some point – a overdeveloped animal in its sensorial powers – the equal of man
 - Overdeveloped – has power beyond what is needed for its suitable survival
 - Empirioschematic scientists refer to this as ‘primitive man’
 - Penultimate man – can start fires and make spears
 - Between man and penultimate man – there is an infinite abyss – man can abstract ideas – an intellect
 - A unique action of God is required to bring into being the soul of the first man
- The first man
 - Most important transition in the universe
 - Transition from a material universe - to one that has intelligence and can know
 - Both a material transition and the direct creation of the soul
 - Scenario
 - A particular penultimate man falls asleep
 - Natural factors – for example, cosmic rays and natural ground radioactivity set by God
 - Direct activity of God – refashions sensorial knowledge and his physical appearance
 - Manifest the radical and complete internal change that is wrought by God’s infusion of the human soul
 - Scenario may not be best possible one but it is meant to give a clear sense of the key issues involved

Chance

- Where is the role of chance?
 - Modern sciences - explain everything in terms of math and schema
 - They avoid 'being' – not their mode of explanation
- Why does chance appear in explanations?
 1. When there are **being or modes of being** in the universe that cannot be represented in the empiriological modes of explanation
 2. When there are entities that can be incorporated but have not yet been
 3. When the causes are outside the universe
- All of these will manifest themselves as chance; something imposed from the outside of the explanation
- #3 is chance is the true sense of the word (really coming from outside the material world)

Chance (continued)

- Chance is the absence of an explanation or a refusal to give one
 - Use statistics when we don't know or want to ignore some aspect of reality
 - "that happened by chance" means "I don't know why it happened"
 - Philosophical definition of chance
 - Intersection of two independent lines of causality
 - Asteroid and the earth, for example (Newtonian physics – initial conditions on equations of motion)
 - Two balls on a pool table – depending on initial condition – will hit or will not hit – chance is the true or philosophical sense
 - There is no being in the system (pool table plus balls) that can be considered responsible – appears irrational
 - There is causality - someone shot one pool ball or God set the initial conditions of the asteroid
 - Chance is relative to the system – there is no absolute chance - irrationality
 - Explanation of life – from chance?
 - Given enough time anything will happen – not true!
 - Given laws and initial conditions – what can happen is completely determined
 - If empiriometric laws and initial conditions together do not already implicitly contain the description of the appearance of life then the will never be there!
 - In popular debates - What is the probability that life will occur?
 - But the whole enterprise of evolutionary science depends on the fact that we already know it is possible!
 - If empiriometric science doesn't implicitly contain the description of the appearance of life – it will never be there
 - Intelligence is evidenced in all the being of the universe even the simplest
 - It is because of the 'is' of the universe that 'what is not in the universe' of relative chance is based.
 - I cannot talk about 'flipping a coin' without the reality of the coin and other substances that make the flip possible.

Chance (continued)

- Your room and my room; the blocks in a Plexiglas case
 - Have atoms and not averaged are very different!
 - Shake the box and the blocks line up – magnetic – a uniform motion would not have had the same effect
 - Chance exists purely from our perspective confined to a given system
- Intersecting independent lines of causality
 - Cannot cause a real being, a new being 'to be'
 - Efficient cause of a new being must remain outside the universe
 - H₂ and O₂ and spark – new being cause in the system not the result of chance
 - Perhaps the spark was caused by chance – but that is not the cause of the new being
- Cannot a monkey given a computer and keyboard write a Shakespeare play, say Hamlet, given enough time?
 - No, an untrained monkey can type forever and it will never create Hamlet
 - However, a man standing next to him could
 - Sits and waits and reads everything monkey types
 - Extremely inefficient way to type Hamlet

Summary

- We have illustrate the irrationality that enters science neglecting the real
- We have seen possible ontological interpretations
- General point:
 - empiriological science cannot undermine the philosophical proofs made in Chapters 3,4, and 5
 - These first parts of physica are not based on the empiriological sciences but are proved before we start them
- Second general point:
 - Empiriological science needs to be at the service of Physics
 - And also *Metaphysica*
 - Basing philosophy on modern science is starting from the wrong place
- Philosophers should
 - Recognize that the specialized sciences fertilizes philosophy, fleshes out and deepens it
- The work of extracting the ontological from the specialized sciences is little done (at least correctly)