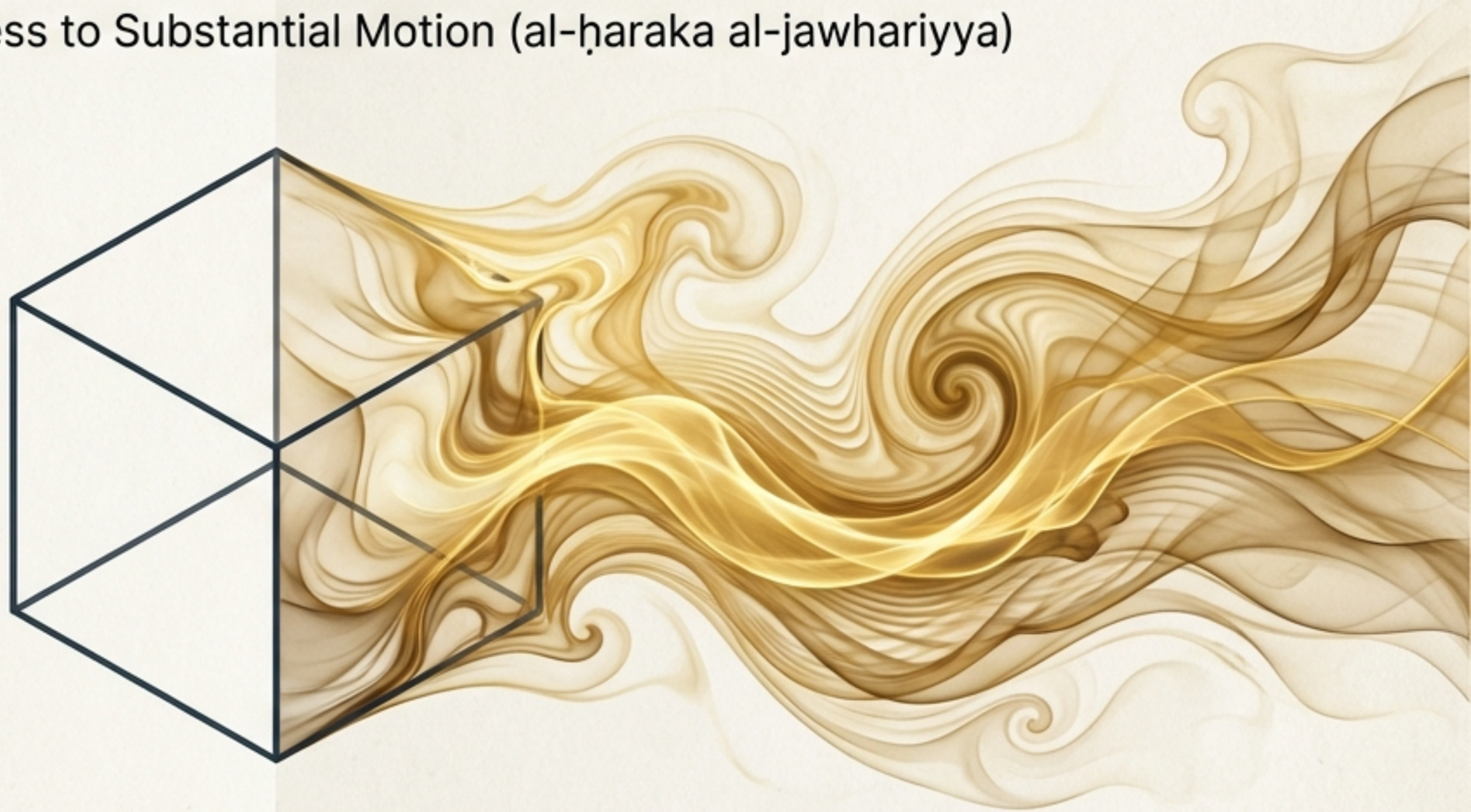
SEMINAR: METAPHYSICAL HISTORY OF PHYSICS

Mulla Ṣadrā & The Deconstruction of the Atom

From Static Discreteness to Substantial Motion (al-ḥaraka al-jawhariyya)

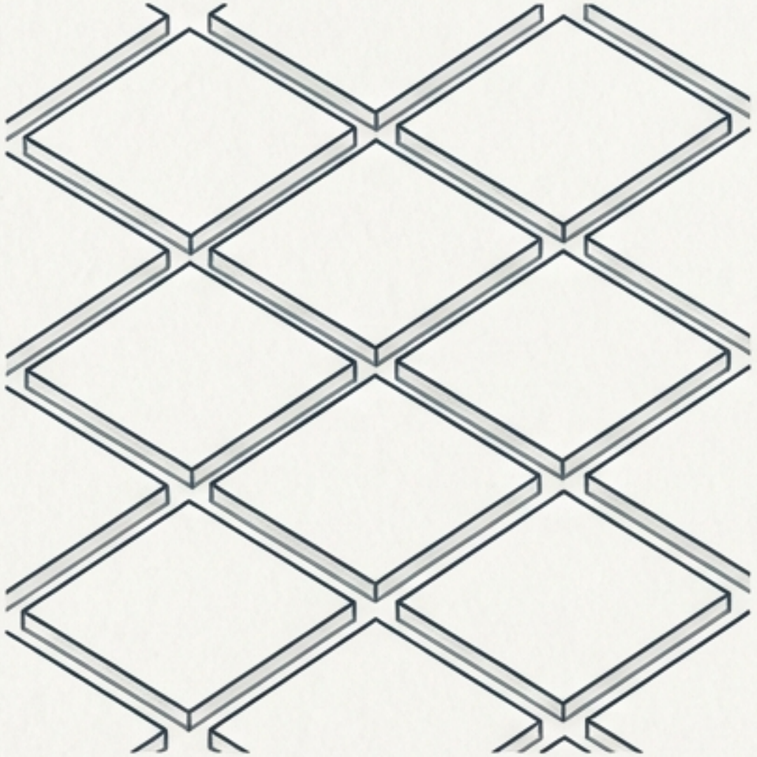


Core Thesis: Reality is not a collection of static things in a void, but a single, graded continuum of intensifying existence. This presentation traces the dialectic from the "Crisis of Logic" in ancient Atomism to the "Sadrian Synthesis" of the 17th century.

NotebookLM

The Fundamental Dialectic: Being vs. Becoming

The Tile Mosaic (Discreteness)



- Is the universe constructed of indivisible, static bricks (*atomos*)?
- **Lineage:** Democritus (Materialism) → Ash'arites (Occasionalism)
- **Concept:** The Atomic Instant

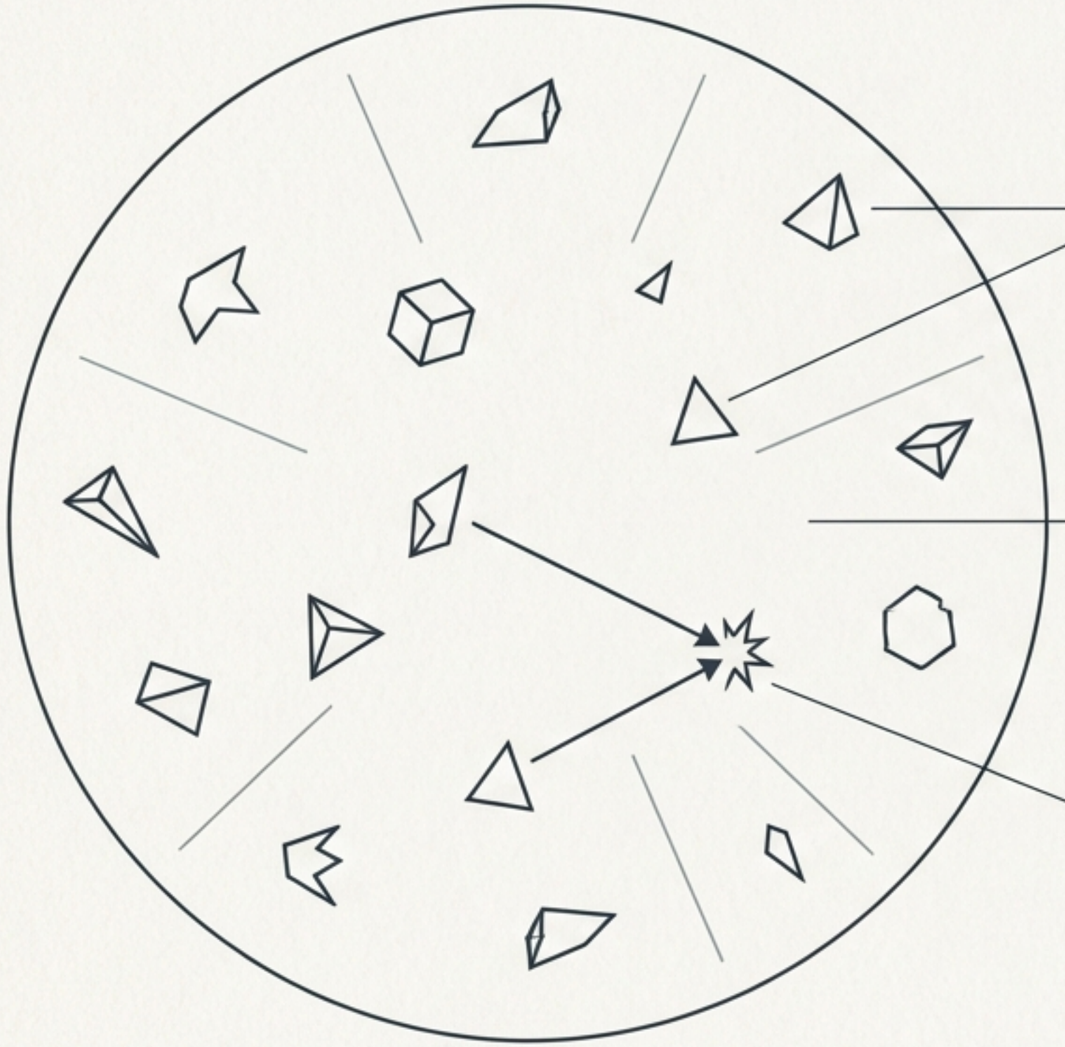
The Flowing Stream (Continuity)

- Is the universe a continuous, fluid process (*wujūd sayyāl*)?
- **Lineage:** Heraclitus → Mulla Ṣadrā (Process Metaphysics)
- **Concept:** The Flowing Now (*al-ān al-sayyāl*)

The Sadrian Disruption: Rejects the "block" universe entirely. Redefines Jawhar (Substance)—traditionally a noun—into a verb.

NotebookLM

The Greek Thesis: Materialism & The Void



Atomos (The Uncuttable) - Solid, Eternal, Shape/Size only.

Kenon (The Void) - Non-Being that allows motion.

Anankē (Necessity) - Mechanical force, no Divine Will.

Origin: Leucippus & Democritus (5th c. BCE)

The Ontology of Separation:

- Reality is binary: The Full (Plēres) and The Empty (Kenon).
- Atoms possess no secondary qualities (color, taste); these are sensory illusions.

Philological Note: Distinct from the Pythagorean 'Monad' (mathematical point). The Atom is a physical solid.

NotebookLM

The Islamic Antithesis: Occasionalism (Kalam)

Tajaddud al-Amthāl: The Illusion of Continuity via Rapid Recreation.

The Theological Pivot: The Mutakallimūn (e.g., Al-Ash'ari) adopted atomism to prove Creation (Huduth).

The Logic of Discontinuity:

1. **Al-Jawhar al-Fard:** The 'Singular Substance' (Atom). Occupies space but has no magnitude until aggregated.
2. **Divine Habit:** Fire does not burn cotton by nature; God creates 'burning' in the cotton at the moment of contact.
3. **The Result:** A universe with no internal nature, held together only by the constant renewal of God's will.

NotebookLM

Comparative Anatomy: Greek vs. Islamic Atomism

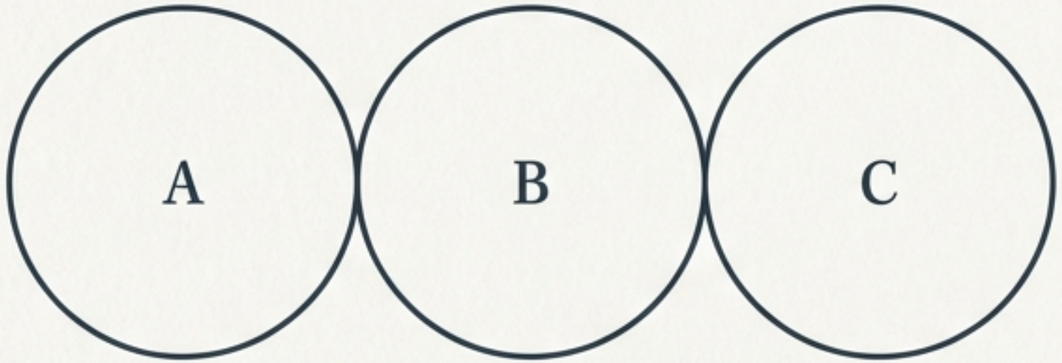
Feature	Greek Materialism	Islamic Kalam
Mechanism of Motion	Mechanical Collision (Anankē)	Divine Renewal (Tajaddud)
The Void	Kenon (Necessary container)	Locus of God's Act
Goal	Atheistic Physics	Theistic Proof (Huduth)
Status of Atom	Eternal & Uncreated	Created & Contingent

Shared Error (Per Sadrā): Both traditions view 'Existence' as a static state rather than a flow. They prioritize the 'Noun' over the 'Verb'.

NotebookLM

The Crisis of Discreteness: Zeno's Revenge

Argument from Contact (Burhān al-Tamāss)

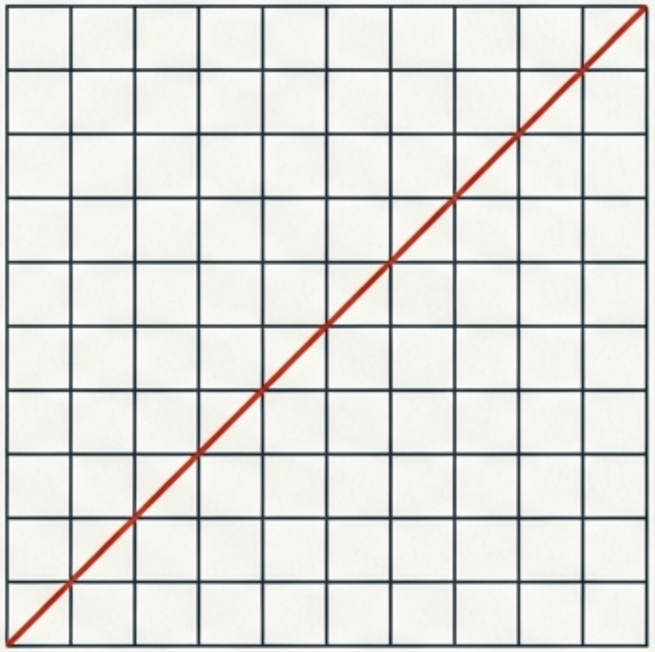


If B touches A on the left and C on the right...

Are the touching sides different?

YES: B has parts → Divisible (Not an atom).
NO: A and C touch the same point → Universe collapses to a point.

The Diagonal Problem



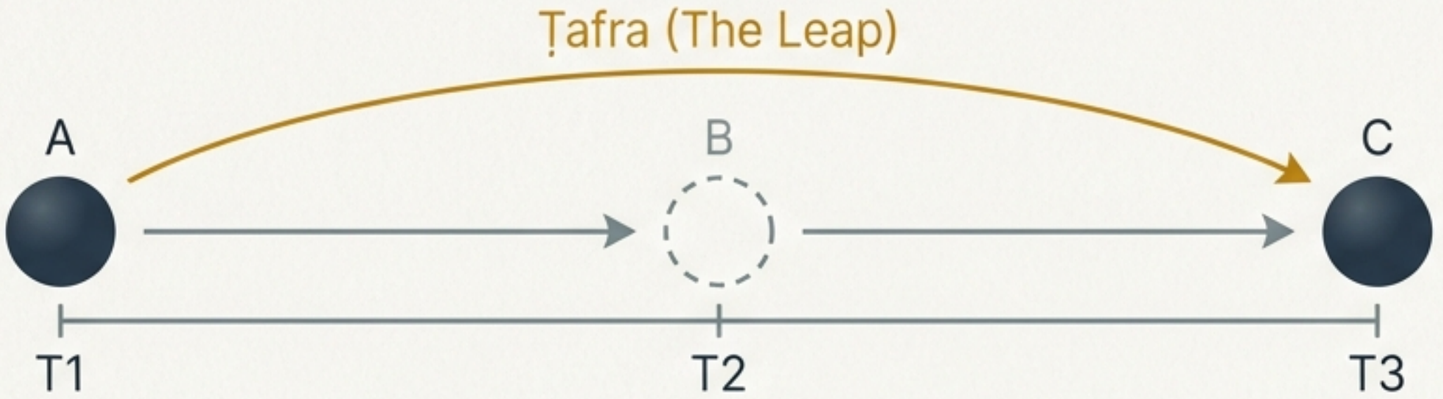
Side = 10 units. Diagonal = $\sqrt{200} \approx 14.14$ units.

In a discrete universe, 0.14 of an atom is impossible.

Sadrā utilizes Zeno's paradoxes to prove that discrete space is a geometric impossibility.

NotebookLM

The ‘Epicycles’ of Atomism: The Theory of the Leap



The Problem of Speed: How does a fast object overtake a slow one in a pixelated universe?

The Radical Fix: Ibrahim al-Naẓẓām’s *Ṭafra*.

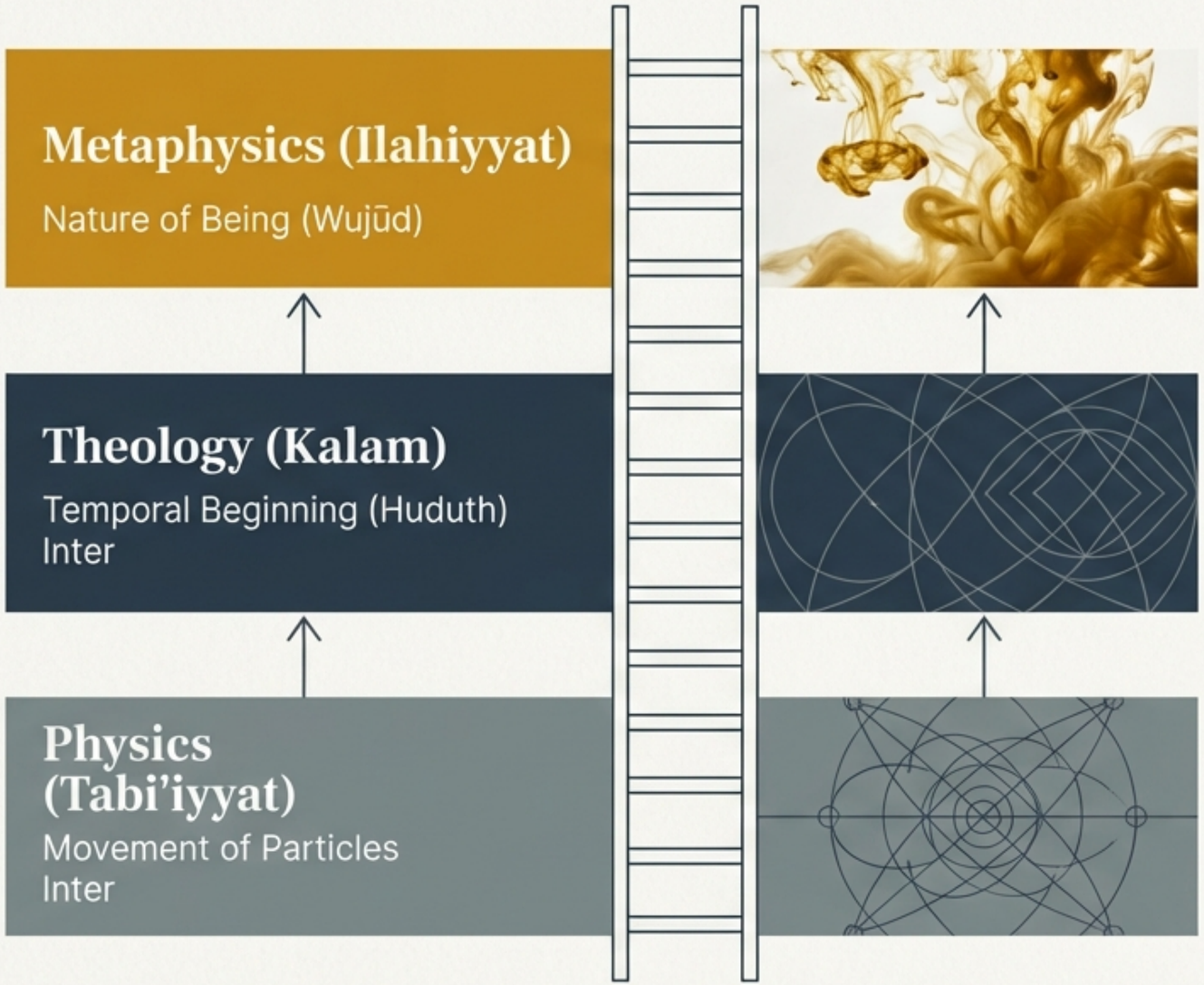
The Theory: Motion is discontinuous. Bodies “leap” over intervals of space without passing through them.

Significance: A desperate attempt to reconcile Infinite Divisibility with Discrete Time.

Sadrian Critique: The absurdity of the Leap proves that motion cannot be the traversal of static points. It must be a continuous flow.

NotebookLM

The Avicennian Pivot: Physics to Metaphysics



Avicenna's Critique: Do not look for God in the "cracks" of atoms or the beginning of time. Look at the nature of Being itself.

Burhān al-Ṣiddīqīn **(Proof of the Truthful):**

1. The Universe is "Contingent" (Mumkin) regardless of whether it is made of atoms.
2. Contingency requires Necessity (Wājib).

The Shift: Moves the debate from "How things move" to "How things exist," preparing the ground for Sadrā.

NotebookLM

The Sadrian Synthesis: Substantial Motion

The Breakthrough:
Motion is not just accidental (change of color/place).
It is Substantial.

Al-Ḥaraka al-Jawhariyya

The Redefinition:

Aristotelian View: Substance is a Noun (Static subject of change).

Sadrian View: Substance is a Verb (The process of change itself).

Solving Zeno:
There are no “instants” to divide.
Time is the measure of this fluid flow.

Reality is a fountain, not a brick.

NotebookLM

Refuting the Void: The Plenum of Existence

Sadrā vs. The Void: Rejects the Greek Kenon.

Tashkīk al-Wujūd (Gradation of Being): Reality is a plenum of Light. "Void" is just a mental abstraction for low-intensity existence.

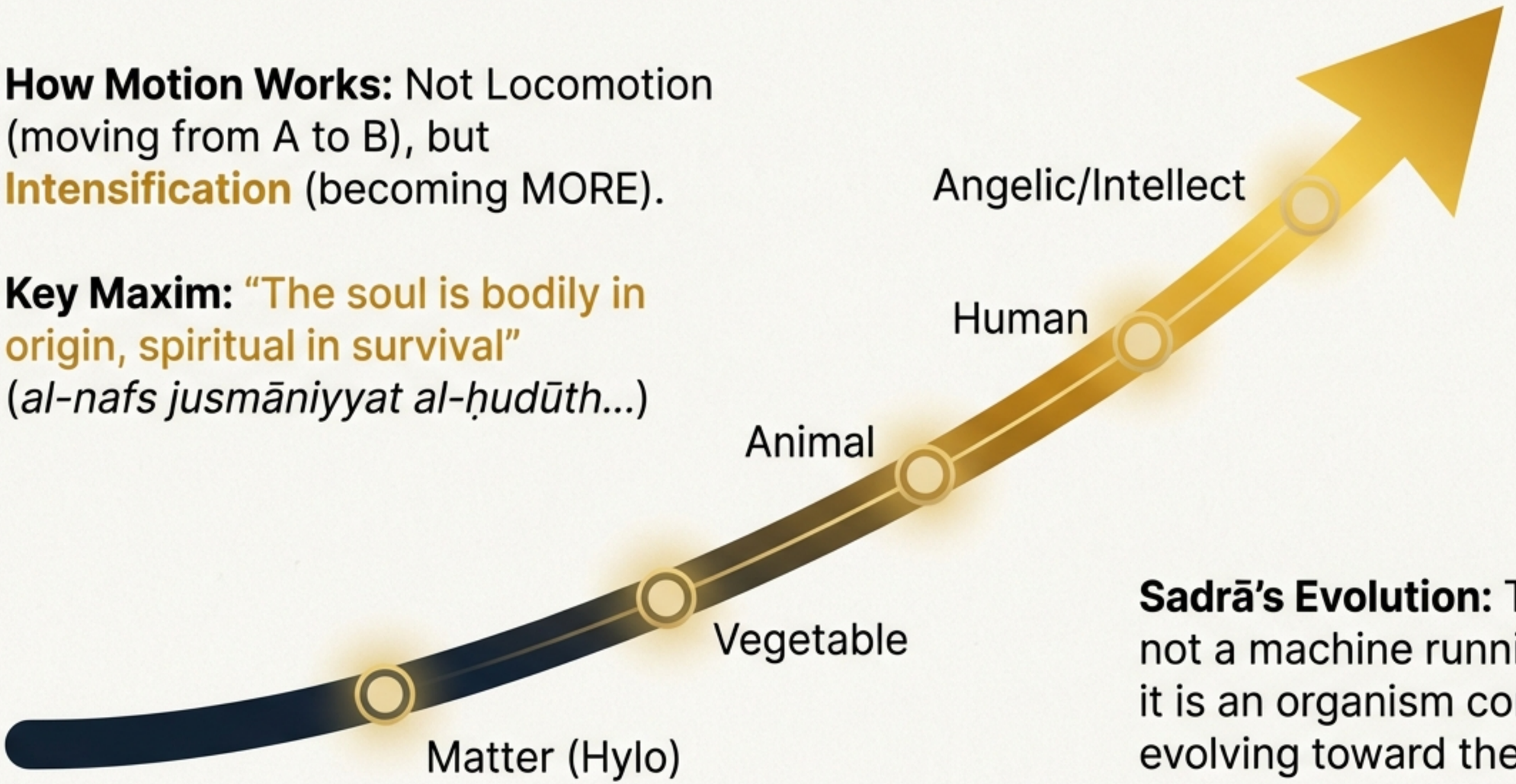
The Analogy: A shadow is not an 'object" that fights the light; it is simply less light. The universe has no gaps, only degrees of intensity.

NotebookLM

The Mechanism: Intensification (*Ishtidād*)

How Motion Works: Not Locomotion (moving from A to B), but **Intensification** (becoming MORE).

Key Maxim: "The soul is bodily in origin, spiritual in survival" (*al-nafs jusmāniyyat al-ḥudūth...*)



Sadrā's Evolution: The universe is not a machine running in place; it it is an organism constantly evolving toward the Divine.

NotebookLM

Comparison of Worldviews (Metaphor Map)

Greek Materialism

Static
Independent
Mechanical

Islamic Kalam

Discontinuous
Dependent
Occasional

Sadrian Synthesis

Continuous
Unified
Graded

Sadra is the **‘Heraclitus’** of Islamic philosophy, solving the problem of ‘One and Many’ via **Gradation (*Tashkīk*)** rather than Aggregation (Atomism).

NotebookLM

Scholarly Nuance: Correcting the Lineage

The ‘Phoenician’ Myth

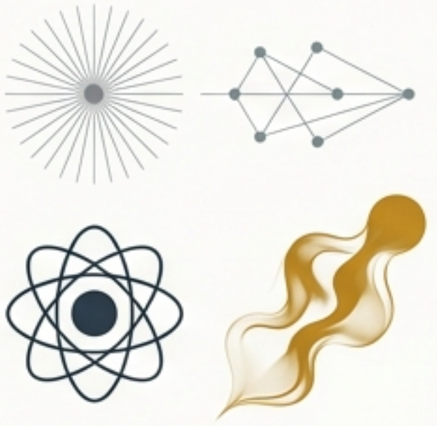
Myth: Atomism originated with the Phoenician 'Mochus' or Sanchuniathon.

Correction: Source analysis shows Sanchuniathon's 'Mōt' was fluid slime/mud, not atomic particles. Mechanical Atomism is a uniquely Greek geometric abstraction.

The ‘Pythagorean’ Error

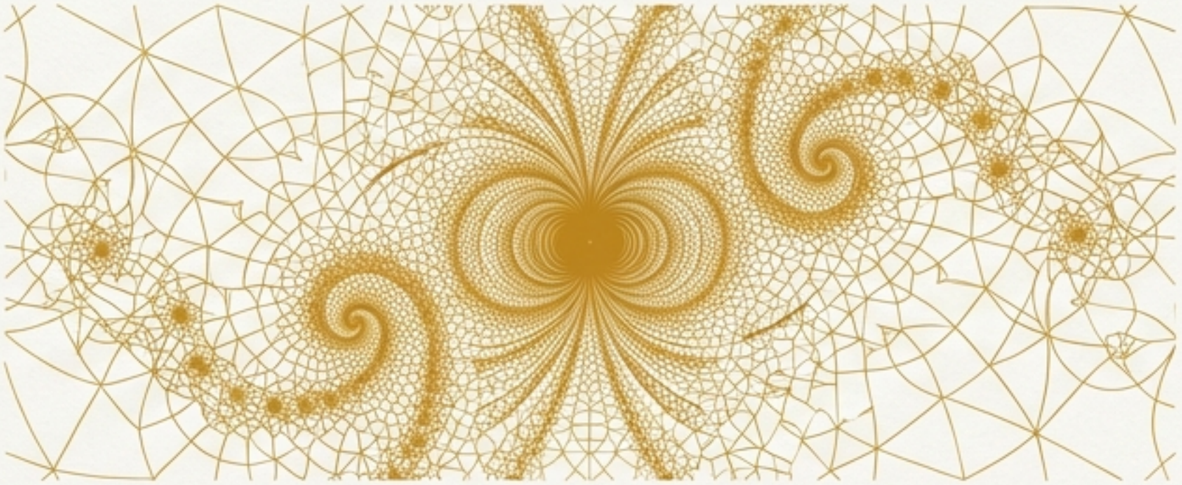
Myth: Pythagoras was an Atomist.

Correction: Pythagoras proposed the Monad (Immaterial, Mathematical Point). Democritus proposed the Atom (Physical Solid). Sadrā synthesizes the Monad's unity with the World's reality.



NotebookLM

Conclusion: The World as Act

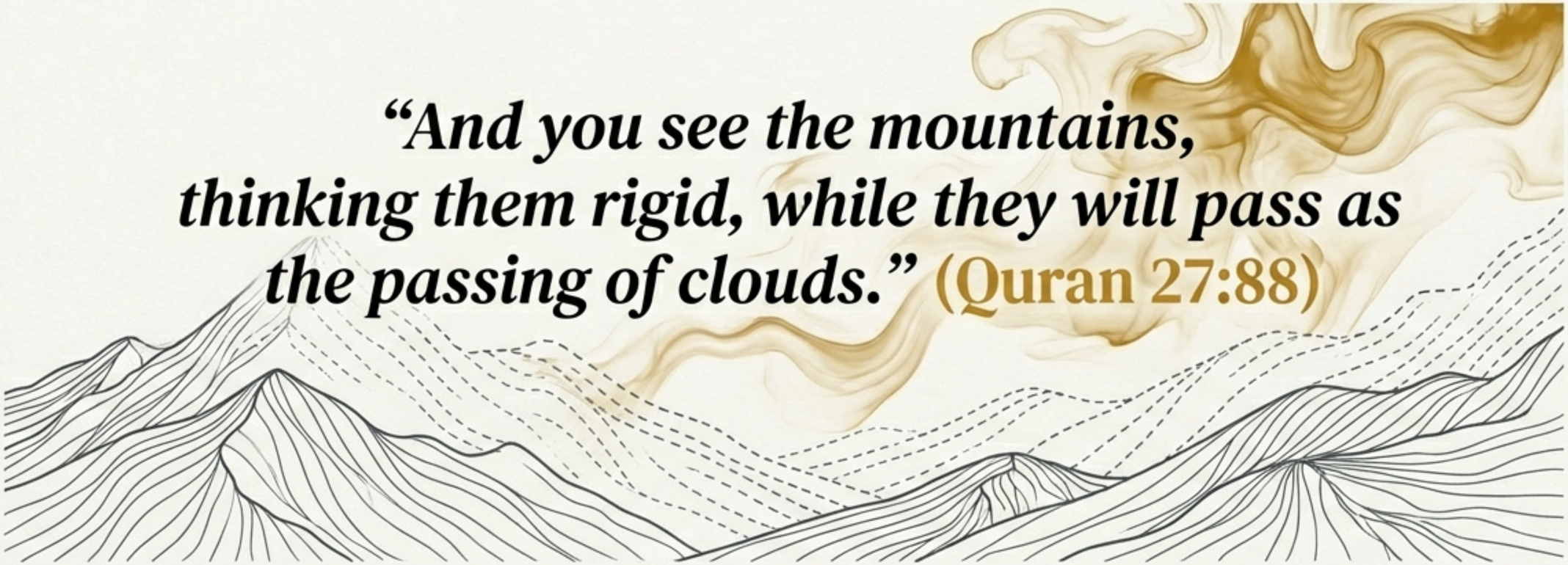


1. **Sadrā** dismantles the **Atom** to save the **Continuum**.
2. The '**Indivisible Part**' is a mental fiction. Reality is a **single, graded act of Being**.
3. **Legacy**: Prefigures modern **process philosophy** (Whitehead) and quantum fields.

Existence is not a set of nouns. It is a single, graded Act.

NotebookLM

A Final Reflection



If our souls are in constant substantial motion, is the ‘Self’ ever the same for two moments?

NotebookLM