

**Is Metaphysics the New Frontier of 21<sup>st</sup> Century Physics?**

# Metaphysics – The root of all Sciences



»Philosophy as a whole is like a tree whose roots are metaphysics, whose trunk is physics, and whose branches are all the other sciences.«

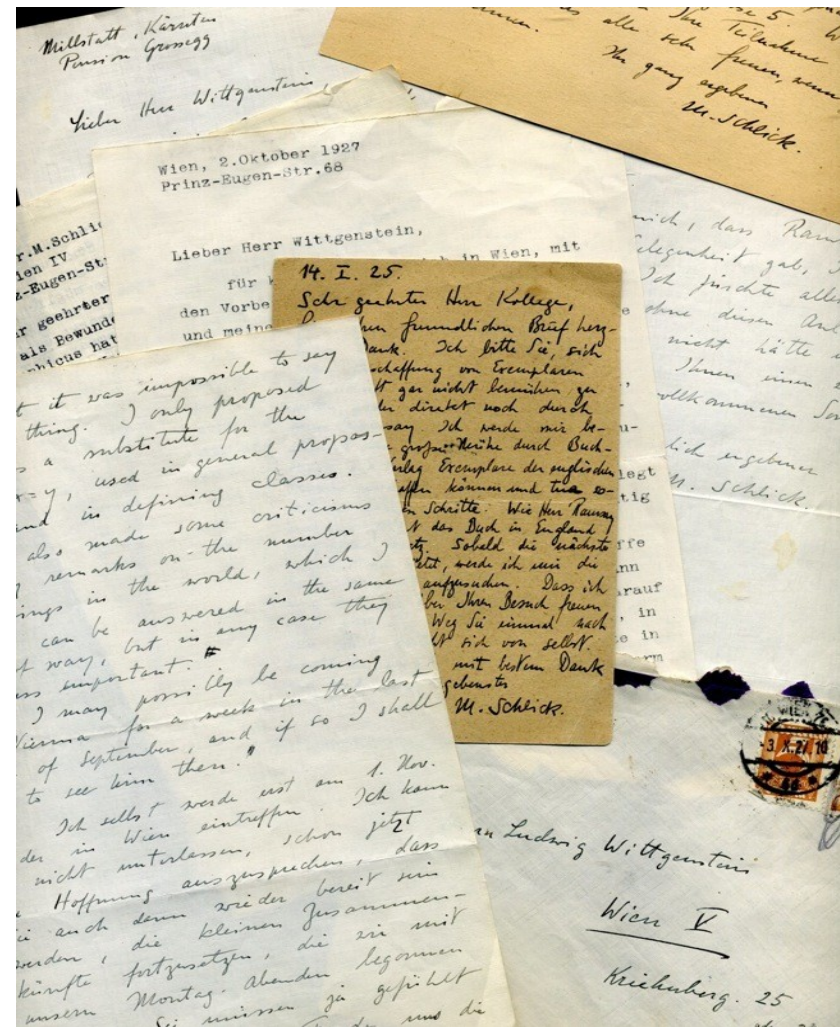
Descartes  
*Principles* (IX-2,14)

# Against Metaphysics

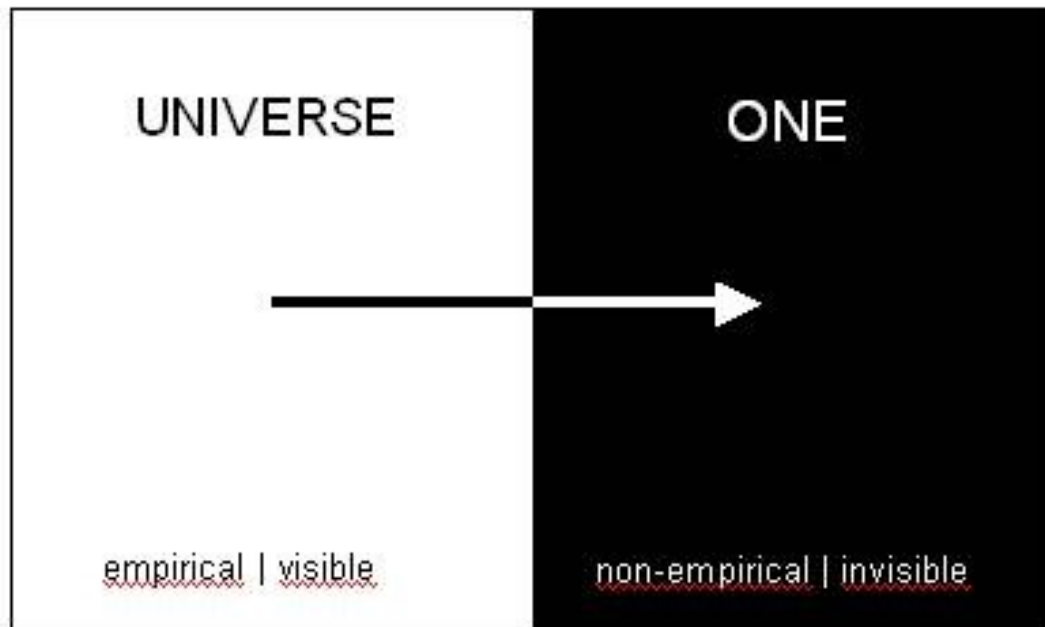
## Credo of the Vienna Circle:

The principle of verification is supposed to furnish a criterion by which it can be determined whether a statement is literally meaningful.

According to this principle a statement has literal meaning if and only if it is *empirically* verifiable.



# Metaphysics is scientifically impossible



„...what valid process of reasoning can possibly lead .. to the conception of a transcendent reality? Surely from empirical premises nothing whatsoever concerning the properties, or even the existence, of anything super-empirical can legitimately be inferred.“

**A.J. Ayer**

Language, Truth and Logic (1936)

# Meetings in Mercer Street 112



Einstein: (Relativity)

Gödel : (Incompleteness Theorem)

Pauli : (Exclusion Principle)

Russell : (Principia Mathematica)

# **FIDES ET RATIO:** A call for a Modern Metaphysics?

»HERE I DO NOT MEAN TO SPEAK OF METAPHYSICS IN THE SENSE OF A SPECIFIC SCHOOL OR A PARTICULAR HISTORICAL CURRENT OF THOUGHT. I WANT ONLY TO STATE THAT REALITY AND TRUTH DO TRANSCEND THE FACTUAL AND THE EMPIRICAL...«.

POPE JOHN PAUL II



# Obstacles towards a Modern Metaphysics

(1) Political Resistance

(2) Mixture of Epistemology & Ontology

(3) Our Inability to deal with metaphysical properties

(4) Historical Development

(5) Prematurity

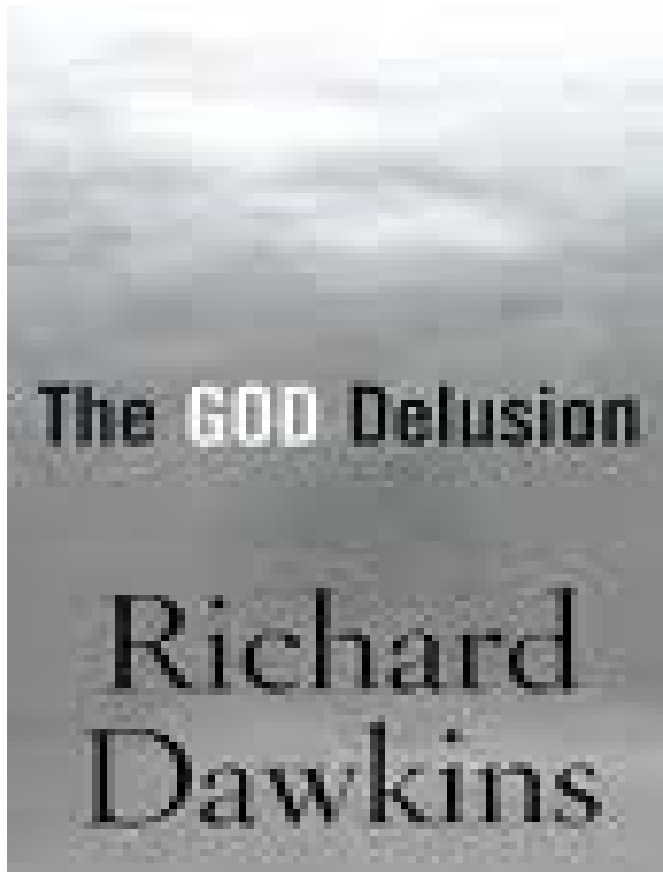
(6) ...

# Properties of the ONE

No.	Property	Physical Implications
I	Omnipresence	Unknown
II	Invisibility	Unknown
III	Absoluteness	Unknown
IV	Oneness	Unknown
V	....	....



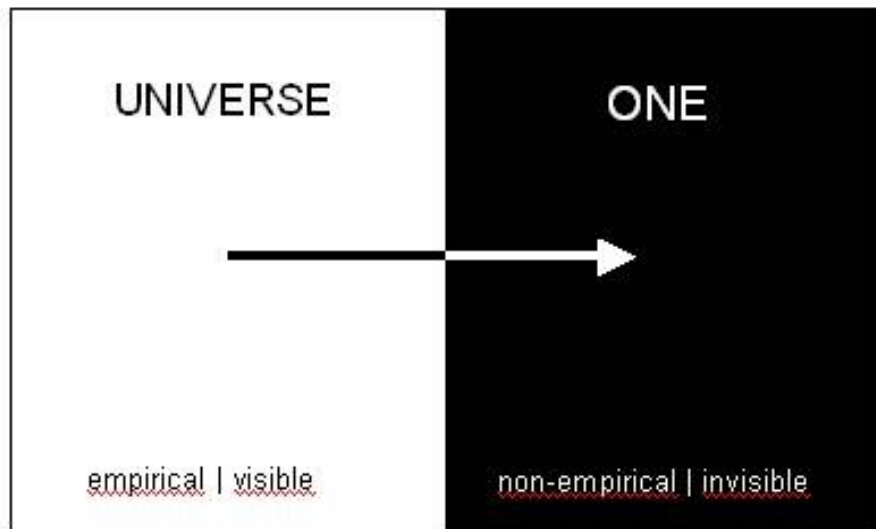
# Is a divine Universe different from a non-divine?



»The difference between the two hypothetical universes could hardly be more fundamental in principle, even if it is not easy to test in practice.«

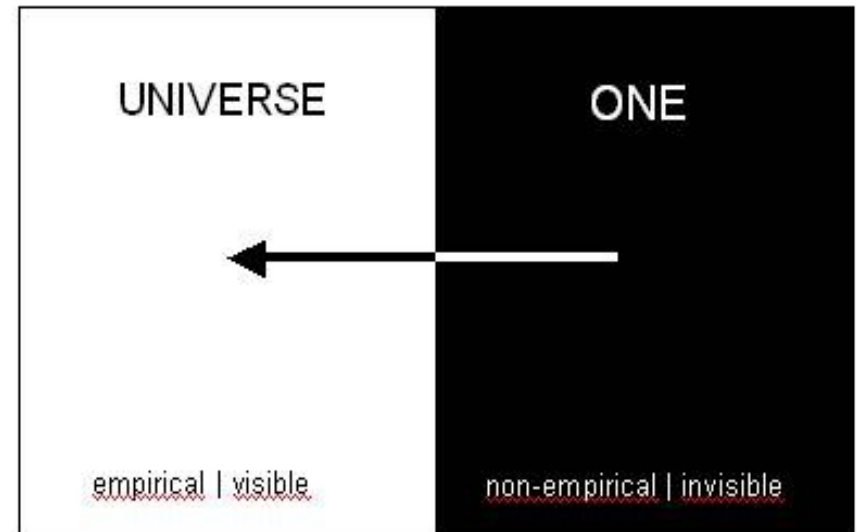
**Richard Dawkins, p. 82**

# The methodological Turn



## Epistemological view:

Metaphysics as Science is impossible, because no data available.



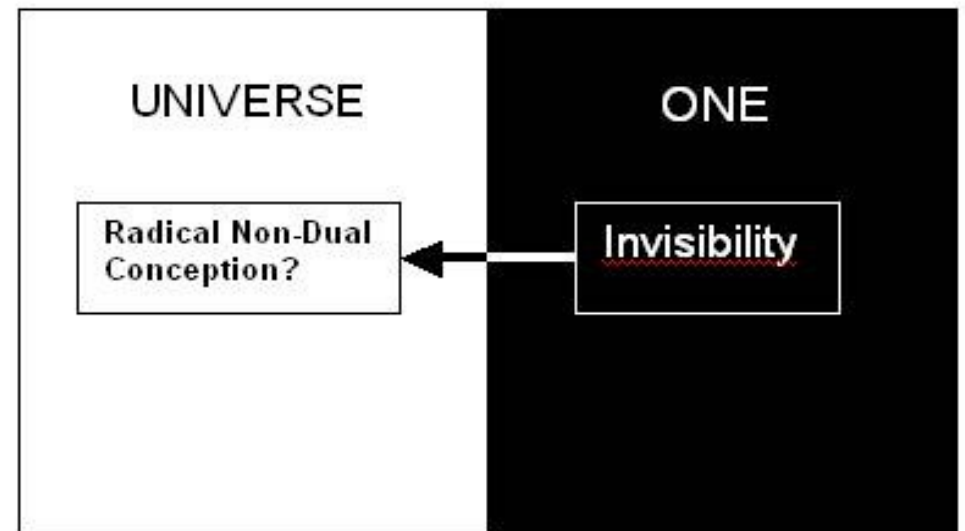
## Ontological view:

Metaphysics as Science is, *in principle*, possible, because data available.

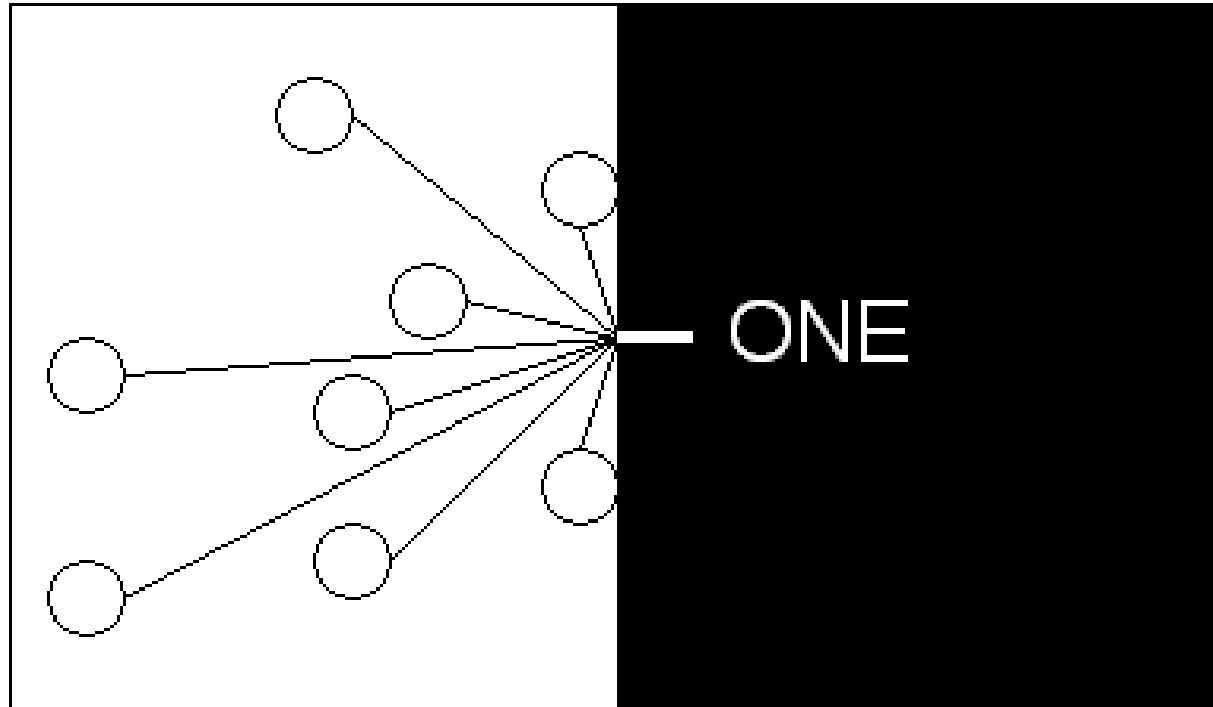
# Focussing on Invisibility

»For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that they are without excuse«.

*The Epistle of Paul to the Romans  
1,20*

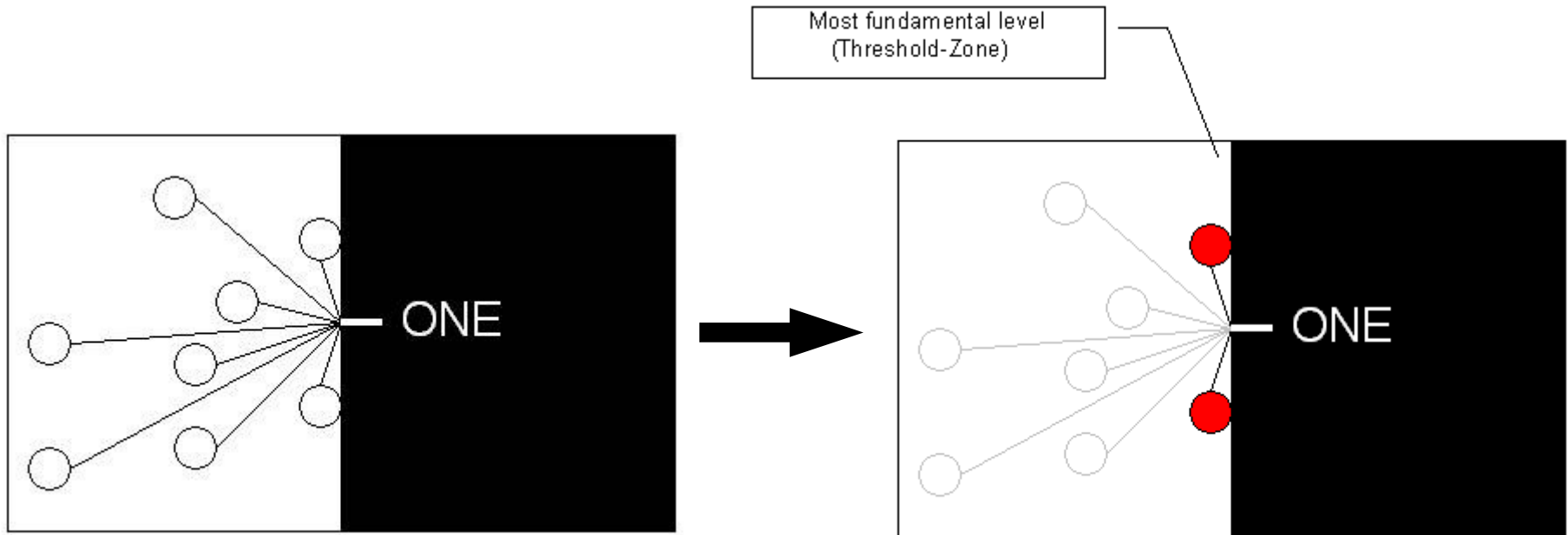


# An **unsolvable** Contradiction?



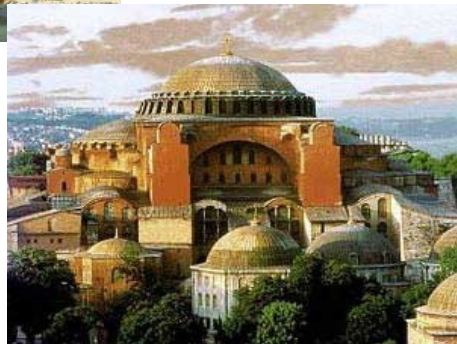
If all differences of the universe are solved into the One, then there is no difference left for the universe to be visible. But if not all differences are solved into the One, how can the One be invisible?

# The Solution



If only all differences of the most fundamental level of the visible Universe have to be solved into the One, then the One can be considered invisible, whereas the Universe itself can still be visible.

# A Journey 1437/38



»Receive now, Reverend Father, the things which I have long desired to attain by various doctrinal-approaches but could not - until, while was at sea en route back from Greece, I was led (by, as I believe, a heavenly gift from the Father of lights, from whom comes every excellent gift) to embrace - in learned ignorance and through a transcending of the incorruptible truths which are humanly knowable – incomprehensible things incomprehensibly.«

Cusanus' letter to his friend Cardinal Julian Cesarini (1440)

# The coincidence of the Smallest & Largest

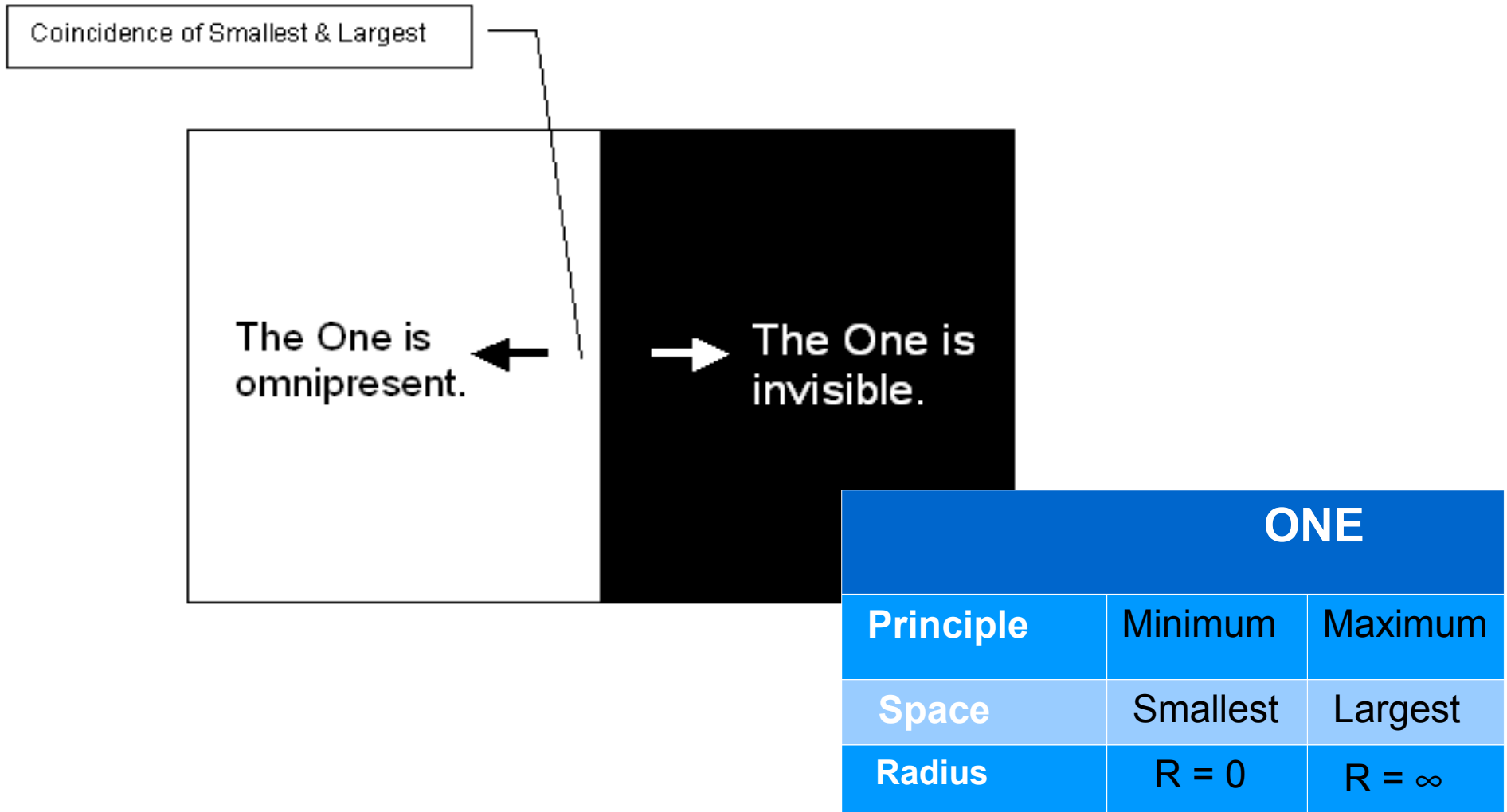
»Et hoc tibi clarius, si ad quantitatem maximum et minimum contrahis. Maxima enim quantitas est maxime magna. Minima quantitas est maxime parva. Absolve igitur a quantitate maximum et minimum subtrahendo intellectualiter magnum et parvum, et clare conspicias maximum et minimum coincidere. Ita enim maximum est superlativus sicut minimum superlativus. Igitur absolute <quantitas> non est magis maxima quam minima, quoniam in ipsa minimum est maximum coincidenter«

**De Docta Ignorancia (1440)**  
**Capitulum IV**

»The foregoing [point] will become clearer to you if you contract maximum and minimum to quantity. For maximum quantity is maximally large; and minimum quantity is maximally small. Therefore, if you free *maximum* and *minimum* from *quantity* – **by mentally removing large and small** – you will see clearly that maximum and minimum coincide. For *maximum* is a superlative just as *minimum* is a superlative. Therefore, it is not the case that absolute quantity is maximum quantity rather than minimum quantity; for in it the minimum is the maximum coincidingly.«

**Learned Ignorance (1440)**  
**Chapter IV**

# Condition of Conspiracy





# The first prediction of a Modern Metaphysics (»Hund's Fact«)

»..the remarkable fact that the local inertial compass coincides with the frame of the most distant galaxies and quasars within the present measurement accuracy of  $2,5 \times 10^{-4}$  arcsec/year.«.

Pfister, Herbert; *Dragging Effects Near Rotating Bodies and in Cosmological Models* in: Barbour, Julien; Pfister, Herbert (ed.), *Machs Principle*, 1995, p. 325



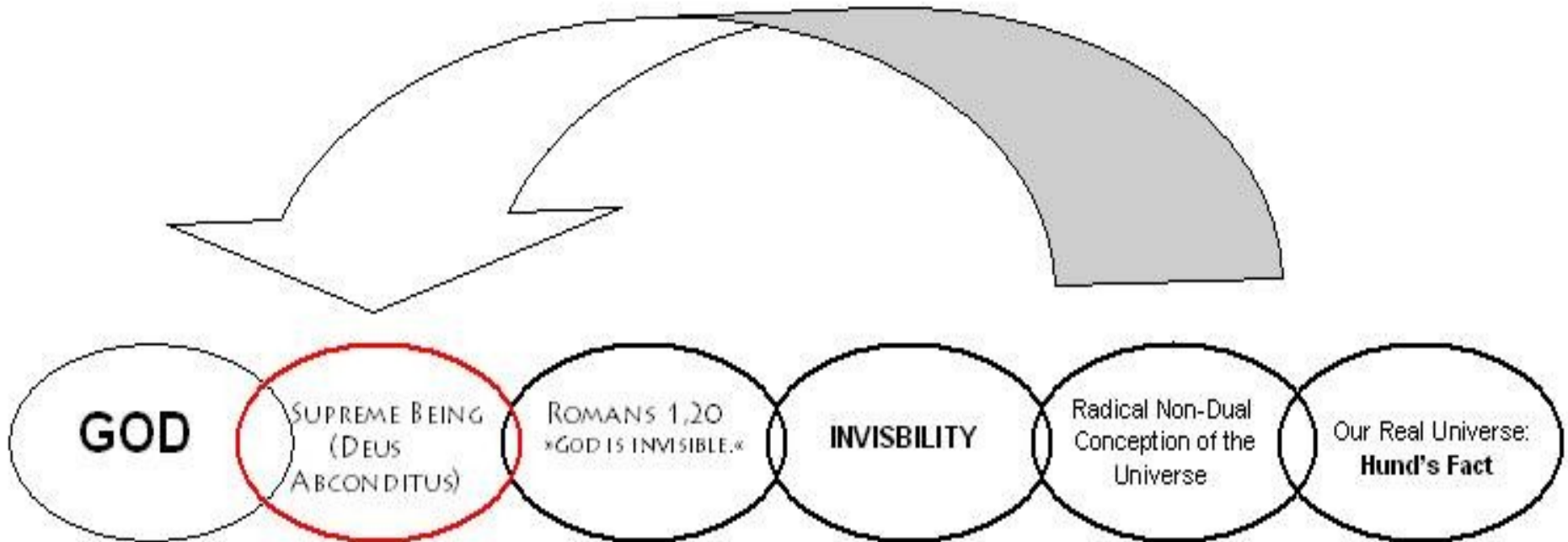
Kovalevsky, J.; et al. (1997). "The Hipparcos Catalogue as a Realisation of the Extragalactic Reference Frame". *Astronomy & Astrophysics* **323**: 620–633.

»„..the greatest wonder .. is the following „cosmic coincidence“: Imagine a physicist performing experiments in a closed local laboratory, especially determining (...) the local inertial systems. Having finished this, he opens the „windows“ of his laboratory and looks to the distant stars, galaxies, quasars, and to the cosmic background radiation. And then he is (hopefully) amazed beyond all expectation that there is no acceleration, especially no angular velocity between the local inertial system and the „cosmic rest system“«.

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Pfister, Herbert; *Newton's First Law Revisited* in: *Foundation of Physics Letters*, Vol. 17, No. 1, February 2004.

# A scientific proof of GOD?



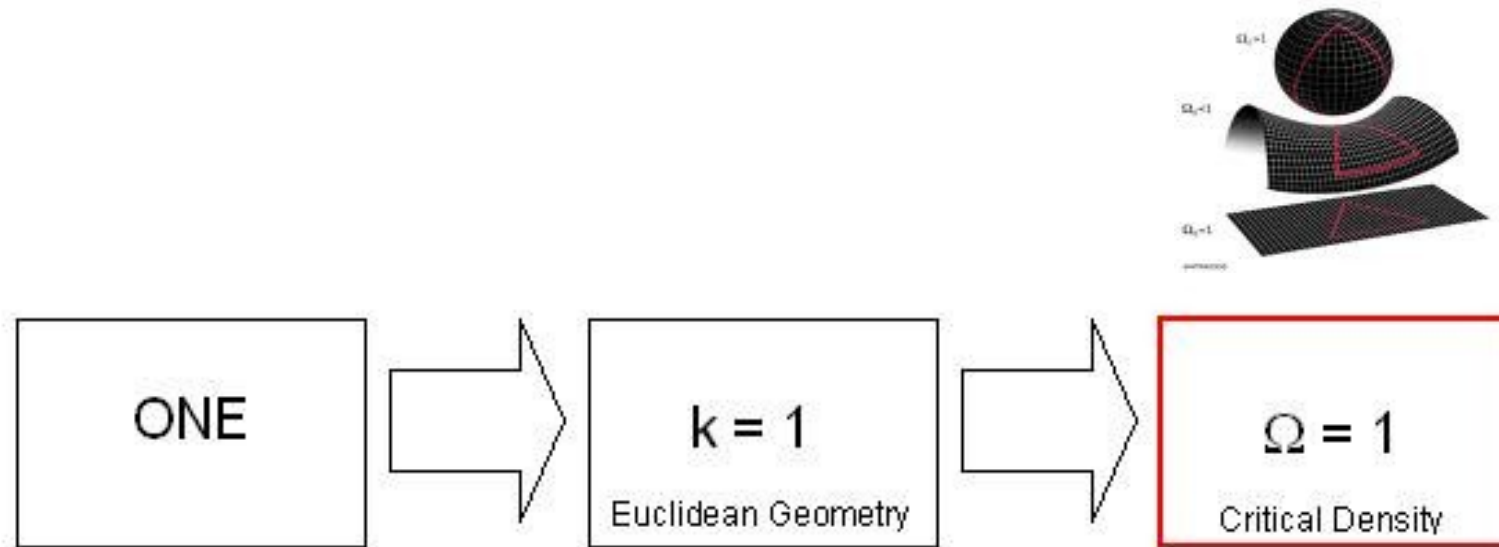
# The Truth of Euclidean Geometry

<b>ONE</b>		
<b>Theory*</b>	Minimum	Maximum
Space	$R = 0$	$R = \infty$
<b>Observation**</b>	Local	Global
Dynamical State	Inertial $F = 0$	Inertial $F = 0$
Geometry	Euclidean $k = 1$	Euclidean $k = 1$

\* Metaphysics

\*\* Hund's Fact

# The ONE as Cause of Fine-Tuning?



The current density of the universe is observed to be very close to the critical value, that is,  $\Omega = 1$ . Since the total density departs rapidly from the critical value over, the early universe must have had a density even closer to the critical density, departing from it by **one part in  $10^{62}$  or less**. This leads scientists to question how the initial density came to be so closely fine-tuned to this very specific value.

# Principle of Radical Non-Duality

ONE		
	MINIMUM	MAXIMUM
R	0	$\infty$
v	0	$\infty$ ?
..	0	$\infty$
..	0	$\infty$

**Reference:** Hansen, Helmut, “About an Anomaly that challenges Relativity”, *Proceedings of the 15th Natural Philosophy Alliance*, April 7 – 11, 2008 at the University of New Mexico, Albuquerque; Vol. 5, No. 1, pp. 73 – 84 (2008)

# Physics of Mandala

## References:

NPA\_2007:  
Do Space and Time have an  
Archetypal Design?

NPA\_2010:  
About the Dual Parametrization of  
C

\*Image was selected by K.A.Mueller; Discovery  
of Superconductivity (Nobel Price 1986)

