

# Ontological Mathematics and Eastern Philosophy

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## The Hologram and You

Mike Hockney's Ontological Mathematics presents a radical framework for understanding reality as a mathematical hologram, grounded in principles like Euler's Formula, Fourier transforms, and monadic singularities. This system shares striking parallels with Eastern philosophical traditions, particularly in its metaphysical foundations, epistemology, and vision of cosmic unity. Below, we explore these connections through key concepts and mathematical formalism.

## The Monad and the Atman-Brahman Unity

### Ontological Mathematics Perspective:

- **Monads** are dimensionless mathematical singularities (souls) defined by **Euler's Formula**:

$$e^{i\theta} = \cos \theta + i \sin \theta$$

#### In a nutshell:

- This equation shows how an exponential with an imaginary exponent can be written as a combination of cosine (real part) and sine (imaginary part). Monads exist in a frequency domain (Soul World) and project the spacetime universe via Fourier transforms.

#### Explanation:

- This equation is known as **Euler's Formula**.
- $e$  is Euler's number (about 2.71828), the base of natural logarithms.
- $i$  is the imaginary unit, defined so that  $i^2 = -1$ .
- $\theta$  (Greek letter "theta", pronounced "thay-tuh") is an angle, usually measured in radians.

- $\cos \theta$  and  $\sin \theta$  are the trigonometric cosine and sine functions of the angle  $\theta$ .
- The **Principle of Sufficient Reason (PSR)** ensures every monad's state is fully determined by analytic necessity.

### Eastern Parallel:

In **Advaita Vedanta**, *Atman* (individual soul) and *Brahman* (universal consciousness) are non-dual. The *Mandukya Upanishad* states: > “*Brahman is the infinite, Atman is Brahman.*”

Like monads, Atman is eternal and participates in the cosmic whole. The PSR mirrors the Hindu concept of *Rta* (cosmic order), where every event has a cause rooted in universal law.

## The Cosmic Hologram and Indra's Net

### Ontological Mathematics Perspective:

- The universe is a **Fourier hologram** generated by monads' collective frequency interactions:

$$\mathcal{F}\{f(x)\} = \int_{-\infty}^{\infty} f(x) e^{-2\pi i \xi x} dx$$

### In a nutshell:

- In essence, this formula tells us how to decompose a function into its frequency components—like breaking a piece of music into its notes. In the context of ontological mathematics, the universe as we know it is a projection (hologram) from the frequency interactions of monads.

### Explanation:

- This equation is called the **Fourier transform**. It translates information between the “spatial” or “time” domain and the “frequency” domain.
- $\mathcal{F}\{f(x)\}$  (pronounced “script F of f of x”) means “the Fourier transform of  $f(x)$ .”
- $f(x)$  is a function of  $x$ , which can represent position or time.
- The integral sign  $\int_{-\infty}^{\infty}$  means you are summing (integrating) over all  $x$  from negative infinity to positive infinity.
- $e$  is Euler's number, as above.
- $\pi$  (Greek letter “pi”, pronounced “pie”) is about 3.14159.
- $i$  is the imaginary unit.

- $\xi$  (Greek letter “xi”, pronounced “ksee”) stands for frequency.
- $dx$  means you are integrating with respect to  $x$ .
- The term  $e^{-2\pi i \xi x}$  is a complex exponential, which encodes oscillations at frequency  $\xi$ .

Spacetime is thus an emergent projection, akin to a “shared dream”.

### Eastern Parallel:

**Buddhist cosmology** describes reality as *Indra’s Net*: a web of jewels reflecting each other infinitely. Each jewel (monad) contains the whole, echoing the holographic principle.

Daoist *Yin-Yang* duality also resonates here: Euler’s Formula balances real ( $\cos \theta$ ) and imaginary ( $i \sin \theta$ ) components, analogous to complementary opposites in Daoism.

## Maya (Illusion) and the Spacetime Projection

### Ontological Mathematics Perspective:

The material world is an **ontological hologram**—a mathematical construct with no intrinsic reality. As Hockney states: > “*Matter is an illusion; the ultimate reality is a domain of pure mind.*”

### Eastern Parallel:

**Advaita Vedanta** teaches *Maya*: the material world is a transient illusion masking *Brahman*. Similarly, the *Heart Sutra* declares: > “*Form is emptiness, emptiness is form.*”

Both systems reject materialism, prioritizing a transcendent reality (mathematical monads or *Brahman*) over sensory experience.

## Wu Wei and the Principle of Sufficient Reason

### Ontological Mathematics Perspective:

The **PSR** dictates that every event has a sufficient reason, rooted in mathematical necessity. Randomness and empiricism are rejected.

**Eastern Parallel:**

Daoist *Wu Wei* (“non-action”) emphasizes alignment with the natural order (*Dao*), which operates through intrinsic laws. The PSR’s deterministic framework mirrors the Daoist ideal of effortless harmony with cosmic principles.

**Reincarnation and Monadic Evolution****Ontological Mathematics Perspective:**

Monads undergo cycles of “Groundhog Death,” reincarnating until achieving **gnosis** (divine self-realization). The universe is a “God factory” refining souls into perfect beings.

**Eastern Parallel:**

**Hinduism** and **Buddhism** teach *samsara* (cycle of rebirth) driven by *karma*. Liberation (*moksha* or *nirvana*) parallels Hockney’s gnosis, where the soul transcends illusion through self-knowledge.

**Mathematical Idealism vs. Eastern Epistemology****Ontological Mathematics Perspective:**

Reality is **mathematical idealism**: minds (monads) are primary, and spacetime is derivative. Science’s sensory focus is criticized as delusional.

**Eastern Parallel:**

**Yogacara Buddhism** posits *citta-matra* (“mind-only”), asserting that consciousness constructs reality. Similarly, the *Zhuangzi* questions: > “*Am I a man dreaming I am a butterfly, or a butterfly dreaming I am a man?*”

**Synthesis: Bridging Rationalism and Mysticism**

While Ontological Mathematics relies on **analytic rigor** (e.g., Euler’s Formula, Fourier transforms) and Eastern traditions on **contemplative insight**, both converge on key themes: 1. **Rejection of materialism**: Both deem the sensory world illusory. 2.

**Primacy of mind/math:** Consciousness or mathematical structure underlies reality.

3. **Cyclical evolution:** Souls/monads progress toward perfection through cycles.

### Mathematical Formalism in Eastern Context:

- The **Taijitu** (Yin-Yang symbol) can be modeled using **Euler’s identity**:

$$e^{i\pi} + 1 = 0$$

#### In a nutshell:

- The equation essentially means that  $e$  raised to the power of  $i$  times  $\pi$ , plus 1, equals zero. This elegantly links five fundamental mathematical constants in a single equation, symbolizing unity and balance (as in the Yin-Yang).

#### Explanation:

- This is called **Euler’s identity**.
- $e$  is Euler’s number.
- $i$  is the imaginary unit.
- $\pi$  (Greek letter “pi”, pronounced “pie”) is about 3.14159.

Here, unity (1) and negation ( $-1$ ) balance to void (0), echoing Daoist non-duality.

### Make the Two One

Mike Hockney’s Ontological Mathematics and Eastern philosophy offer complementary visions: one through rationalist mathematics, the other through mystical unity. Both dissolve the illusion of separateness, revealing a cosmos governed by eternal principles—whether mathematical equations or *Dharma*. By synthesizing these frameworks, we glimpse a universe where reason and transcendence coalesce, and the monad’s journey mirrors the Atman’s path to Brahman.