

# The Theory of Breaking Information Species Barriers and the Information Physics Structure of Mind-Cultivation States: Extending Material Foundations to the Cosmic Operating System Plane

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## Abstract

This theoretical research paper introduces an information physics framework under *The First Ping Paradigm*, developed by building upon and extending the empirical foundations established by mainstream science. The primary objective of this theory is to bridge the metaphysical gap between physical matter and qualitative phenomena. It proposes a methodology to expand physical metrics into a universal shared information database through a Massive Automated Cosmic Operating System (MACS), thereby enabling the calculation and explanation of qualitative states in seamless integration with mainstream laws of physics.

**Keywords:** Information Physics, The First Ping Paradigm, Landauer's Principle, Qualia, Universal Operating System

## 1. Introduction and Core Hypothesis: The Harmonization of Metrics and Scientific Foundations

Mainstream science has contributed immensely to humanity by establishing rigorous natural laws, including quantum mechanics, thermodynamics, and particle physics, all rooted in objective, observable, and reproducible physical metrics. However, when addressing phenomena of consciousness or "qualia"—such as internal subjective experiences and qualitative perceptions—mainstream science frequently isolates these elements from physical equations due to the historical absence of appropriate quantitative metrics.

*The First Ping Paradigm* does not seek to refute or dismantle these established physical laws. Instead, it proposes a conceptual "bridge" to expand the scope of

existing material physical metrics, integrating them into the cosmic operating system plane through shared informational processing mechanisms. This integration allows both physical and non-physical domains to explain each other logically and systematically.

## 2. Theoretical Mechanism and Extension of Material Structure

To convert physical and qualitative states into computable data, this theory defines information processing mechanisms through a foundational dual-code system. This system operates in strict accordance with Landauer's Principle, which states that any logical alteration or erasure of information in a processing system must have a definitive thermodynamic cost in terms of energy and heat dissipation.

The paradigm models this relationship via the following functional equation:

$$\mathcal{T} = \mathcal{F} (\mathbf{K}_1, \mathbf{K}_0)$$

Where each systemic variable is defined as follows:

- **$\mathcal{T}$  (Total Thermodynamic Information):** The total thermodynamic information energy of the system generated through informational interaction.
- **$\mathbf{K}_1$  (Kinetic / Physical Information Code):** The informational code intrinsically bound to the physical structure and kinetic energy of matter (Physical Layer).
- **$\mathbf{K}_0$  (Qualitative / Base-Operating Code):** The fundamental code within the cosmic operating system plane, serving to register and process qualitative state values (Qualitative Layer).

Upon interaction between matter and the processing system, the function  $\mathcal{F}$  computes the resulting changes in entropy. This mathematical relationship demonstrates how qualitative information in the  $\mathbf{K}_1$  plane actively influences and alters the physical state in the  $\mathbf{K}_0$  plane, adhering precisely to the laws of thermodynamics.

### 3. Applications and Case Studies

To enable researchers to utilize this theory for empirical testing and quantitative measurement, the model stipulates that every phenomenon within the universe can be classified and measured as a "Descriptive Value" through the decoded interactions between  $\mathbf{K}_1$  and  $\mathbf{K}_0$  on the informational processing buffer.

For example, consider a case study within cognitive science:

- **Pain Perception:** The physical neural signals transmitted to the brain constitute the physical information code ( $\mathbf{K}_1$ ). However, the internal experiential perception of pain is processed and displayed as a state value in the qualitative plane ( $\mathbf{K}_0$ ).
- **Gustatory Satisfaction:** The chemical reactions occurring on the taste buds represent  $\mathbf{K}_1$  data, whereas the subjective qualitative experience of flavor represents  $\mathbf{K}_0$  data.

By processing both parameters through the equation  $\mathcal{T} = \mathcal{F}(\mathbf{K}_1, \mathbf{K}_0)$ , researchers can quantify the minimum thermodynamic energy required by the system to transition an information state from physical to qualitative. This quantification fully aligns with Landauer's Principle, demonstrating that the perceived "species barriers" separating inanimate matter, biological life, and conscious awareness can be systematically dissolved by treating all phenomena as distinct information states.

### 4. Research Transformation and Future Applications

The framework established by *The First Ping Paradigm* provides a unified paradigm for physicists and philosophers to analyze cosmic computation collectively across three major domains:

1. **Simulation Enhancement:** Translating physical properties into thermodynamic information codes drastically simplifies objective variables into binary commands and entropic calculations. This abstraction allows researchers to simulate macro-physical systems or complex biomolecular

structures on supercomputers and quantum computing platforms with significantly increased speed, accuracy, and resource efficiency.

2. **Systematic Synthesis:** Deep qualitative behaviors of living organisms and consciousness no longer need to be excluded from scientific laboratories. Instead, they can be calculated and experimented upon in tandem with mainstream physical constants, fostering robust, empirical cross-disciplinary research.
  
3. **Fundamental Precision:** Utilizing *The First Ping Paradigm* alongside classical thermodynamic laws allows scientists to detect and measure minimal energy dissipation at the most fundamental layers of information processing. This capability is highly beneficial for the next generation of information technology and quantum computing developments.

## 5. Conclusion

*The First Ping Paradigm* upholds and honors the structural foundations laid by mainstream science, utilizing this informational architecture as an extension to propel human knowledge beyond historical limitations. Shifting the scientific paradigm from pure materialism to information physics on an operating system plane serves as a critical key to unlocking the mysteries of consciousness and the nature of the universe.

## References

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