

An Invitation to Research: The Acta Universi Hypothesis as a Framework and Bridge Between Ontologies

An Article for Potential Researchers and Readers

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Abstract

This work is **an invitation to research** the Acta Universi (AU) hypothesis — an ontological framework in which the fundamental structure of reality is considered to be a non-local archive of irreversible events (the thought-form entropy field S_Θ), while space-time, matter, interactions, and consciousness are regarded as emergent structures generated by the dynamics of this field.

The text is addressed to potential researchers — physicists, cosmologists, mathematicians, philosophers, biologists, specialists in quantum information, and methodologists of science — who are looking not for a finished theory, but for **a space to work in**, where much remains open and where the very formulation of the question can change the way we look at familiar disciplines.

The work shows that the AU framework:

- **Serves as a bridge between ontologies:** it connects physics and computer science, physics and biology, physics and the philosophy of consciousness, cosmology and the life sciences, as well as Western and Eastern ontological traditions.
- **Gives the researcher:** a new language for old problems, new questions for research, a tool for interdisciplinary projects, and freedom for speculative thinking.
- **Can potentially open up:** new directions in physics (emergent gravity, emergent constants, a new interpretation of the dark sector), cosmology (evolution of $w(a)$, the noospheric transition, panspermia), biology (quantum biology, biophotonics, microbial cognition, psychoneuroimmunology), computer science and AI (AU chips, neuromorphic

computing), and philosophy (ontology of information, philosophy of time, methodology of interdisciplinary research).

- **Poses new questions:** fundamental (is information a fundamental substance? can entropy be primary? is non-locality a fundamental property?), formal (explicit form of the kernel $K(x, y)$, spectrum of the operator $\hat{L}$, derivation of equations of motion), and empirical (correlations of entropic parameters with observable quantities, variations of constants, anomalies in LHC, LIGO, DESI data, non-local correlations in biology).
- **Points to almost unexplored areas:** non-local correlations in biology, entropy radiation, kairos-time, the noospheric transition, the dark sector as unmanifested modes.
- **Opens opportunities for funding:** through interdisciplinary grants (Templeton Foundation, FQXi, ERC, NSF), publications in open journals (Zenodo, arXiv, ResearchGate, [Preprints.ru](https://preprints.ru), PhilPapers), participation in conferences and seminars, writing books and monographs, consulting and expertise.

The work emphasizes that AU **does not replace** the Standard Model, QCD, QED, GR, or Λ CDM, **does not have** direct experimental confirmation, and **does not claim** the status of a “final theory of everything.” It is a **hypothetical construct** that may be useful as a language, as a bridge, as a source of new questions.

The article concludes with **an invitation**: not to accept AU, but to research it. If you feel that in your field there are unresolved questions that do not yield to mainstream approaches, if interdisciplinarity is your path, if curiosity is the main thing in science, if speculative thinking is not a sin but a virtue — try the AU framework.

Keywords: Acta Universi; thought-form entropy field; S_Θ ; emergence; ontological framework; interdisciplinarity; quantum gravity; dark matter; dark energy; consciousness; noosphere; kairos-time; entropy radiation; invitation to research.

Аннотация

Настоящая работа представляет собой **приглашение к исследованию** гипотезы Acta Universi (AU) — онтологической рамки, в которой фундаментальной структурой реальности считается нелокальный архив необратимых событий (поле энтропии мыслеформ S_Θ), а пространство-время, материя, взаимодействия и сознание рассматриваются как эмерджентные структуры, порождаемые динамикой этого поля.

Текст адресован потенциальным исследователям — физикам, космологам, математикам, философам, биологам, специалистам по квантовой информации и методологам науки, — которые ищут не готовую теорию, а **пространство для работы**, где многое остаётся открытым и где сама постановка вопроса может изменить взгляд на привычные дисциплины.

Работа показывает, что AU-рамка:

- **Служит мостом между онтологиями:** связывает физику и информатику, физику и биологию, физику и философию сознания, космологию и науки о жизни, а также западные и восточные онтологические традиции.
- **Даёт исследователю:** новый язык для старых проблем, новые вопросы для исследования, инструмент для междисциплинарных проектов и свободу для спекулятивного мышления.
- **Может потенциально открыть:** новые направления в физике (эмерджентная гравитация, эмерджентные константы, новая интерпретация тёмного сектора), космологии (эволюция $w(a)$, ноосферный переход, панспермия), биологии (квантовая биология, биофотоника, микробная когнция, психонейроиммунология), информатике и ИИ (AU-чипы, нейроморфные вычисления), философии (онтология информации, философия времени, методология междисциплинарных исследований).
- **Ставит новые вопросы:** фундаментальные (является ли информация фундаментальной субстанцией? может ли энтропия быть первичной? является ли нелокальность фундаментальным свойством?), формальные (явная форма ядра $K(x, y)$, спектр оператора $\hat{L}$, вывод уравнений движения) и эмпирические (корреляции энтропийных параметров с наблюдаемыми величинами, вариации констант, аномалии в данных LHC, LIGO, DESI, нелокальные корреляции в биологии).
- **Указывает на почти неисследованные области:** нелокальные корреляции в биологии, энтропийное излучение, кайрос-время, ноосферный переход, тёмный сектор как непроявленные моды.
- **Открывает возможности для финансирования:** через междисциплинарные гранты (Templeton Foundation, FQXi, ERC, NSF), публикации в открытых журналах (Zenodo, arXiv, ResearchGate, [Preprints.ru](https://preprints.ru), PhilPapers), участие в конференциях и семинарах, написание книг и монографий, консалтинг и экспертизу.

Работа подчёркивает, что AU **не заменяет** Стандартную модель, КХД, КЭД, ОТО или Λ CDM, **не имеет** прямых экспериментальных подтверждений и **не претендует** на статус «окончательной теории всего». Это **гипотетическая конструкция**, которая может быть полезна как язык, как мост, как источник новых вопросов.

Статья завершается **приглашением**: не принимать AU, а исследовать её. Если вы чувствуете, что в вашей области есть нерешённые вопросы, которые не поддаются мейнстримным подходам, если междисциплинарность — ваш путь, если любопытство — главное в науке, если спекулятивное мышление — не грех, а добродетель, — попробуйте AU-рамку.

Ключевые слова: Acta Universi; поле энтропии мыслеформ; S_Θ ; эмерджентность; онтологическая рамка; междисциплинарность; квантовая гравитация; тёмная материя; тёмная энергия; сознание; ноосфера; кайрос-время; энтропийное излучение; приглашение к исследованию.

1. Why This Article Is Needed

This text is addressed to those who are at the beginning or in the middle of their research path. To physicists, cosmologists, mathematicians, philosophers, biologists, specialists in quantum information, and methodologists of science. To those who are looking not simply for a topic for their next paper, but for **a space to work in**, where not all the dots have been placed over the “i”s, where much remains open, and where the very formulation of the question can change the way we look at familiar disciplines.

The Acta Universi (AU) hypothesis is not a finished theory. It is **an ontological framework, a language of description, a bridge between areas** that today often exist in isolation. And it is an invitation to research.

We propose not to “accept” AU, but to **use it as a tool**. As a scalpel, not as a dogma. As a map, not as the territory. As a hypothesis, not as the truth.

In this article we will show:

- What the AU framework is and why it may be useful precisely to you,
 - What bridges between ontologies it builds,
 - What it gives a researcher in their everyday work,
 - What new questions it poses,
 - What areas remain almost untouched,
 - Where one can find financial and institutional support,
 - And why this framework is for those who have preserved their curiosity.
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2. What the AU Framework Is

Before speaking of possibilities, let us briefly outline what the AU hypothesis represents as **a research framework**.

2.1. The Central Idea

In AU ontology, the fundamental structure of reality is considered to be a **non-local archive of irreversible events** — the thought-form entropy field S_Θ . Space-time, matter, interactions, and consciousness are regarded as **emergent structures** generated by the dynamics of this field.

This means that AU is not a theory of particles, not a theory of gravity, not a theory of consciousness in the narrow sense. It is a **meta-framework** in which other theories can be reinterpreted as special cases or approximations.

2.2. Key Concepts

- S_Θ — the thought-form entropy field, a non-local archive,
- $\Theta(t)$ — a thought-form, a coherent configuration in the field,
- $K(x, y)$ — the non-local kernel describing the memory of the archive,
- $\mathcal{C}$ — the coherence of a configuration with the archive,
- δS_Θ — entropic mismatch,
- Φ — the field of integrated information (consciousness),
- τ — kairos-time, event-saturated time.

These concepts have already been introduced in previous works of the cycle and form a **unified language** for describing physical, biological, and informational processes.

2.3. What AU Does Not Claim

It is important to emphasize from the outset:

- AU **does not replace** the Standard Model, QCD, QED, GR, or Λ CDM,
- AU **does not have** direct experimental confirmation,
- AU **does not give** quantitative predictions comparable to those of mainstream theories,
- AU **does not claim** the status of a “final theory of everything.”

It is a **hypothetical construct** that may be useful as a language, as a bridge, as a source of new questions. No more — but no less.

3. AU as a Bridge Between Ontologies

One of the main values of the AU framework is that it **connects** areas that today often do not talk to each other.

3.1. Physics and Computer Science

In the Standard Model, information is not a fundamental category. In AU, it is. This opens a bridge between elementary particle physics and information theory, quantum informatics, and the theory of computation.

What this gives: the possibility of describing physical processes in terms of information and entropy, which is already partially done in entropic gravity, the holographic principle, and quantum information theory.

3.2. Physics and Biology

In the mainstream, physics and biology are separated: physics studies fundamental interactions, biology studies complex systems. AU offers **a unified language** for describing both areas through thought-form entropy.

What this gives: the possibility of linking quantum biology, biophotonics, microbial cognition, psychoneuroimmunology, and other areas with fundamental physical processes.

3.3. Physics and the Philosophy of Consciousness

The problem of consciousness remains one of the most difficult in philosophy and science. AU offers **an ontological framework** in which consciousness is not an epiphenomenon but an active field interacting with the archive.

What this gives: the possibility of linking philosophical theories of consciousness (IIT, Orch OR, GNWT, Active Inference) with physical models through a unified formalism.

3.4. Cosmology and the Life Sciences

The noospheric transition, panspermia, entropy radiation — these AU concepts link cosmology with the life sciences.

What this gives: the possibility of posing questions about the role of life and consciousness in cosmological evolution, which in the mainstream often remain on the periphery.

3.5. Eastern and Western Ontologies

The AU framework in a certain sense **connects** Western scientific ontology (particles, fields, interactions) with Eastern ontologies (non-locality, the interconnectedness of all things, consciousness as fundamental reality).

What this gives: the possibility of dialogue between scientific and philosophical traditions that today often exist in parallel.

4. What AU Gives a Researcher in Their Work

Now let us turn to the practical question: **what does AU give a specific researcher?**

4.1. A New Language for Old Problems

Many problems in physics, biology, and philosophy today are **stuck** — not because there are no data, but because there is no language to describe them. AU offers such a language.

Example: The problem of quantum gravity. In the mainstream there are different approaches (string theory, LQG), but none is final. AU offers **a third path**: gravity as an emergent phenomenon generated by the dynamics of S_{Θ} .

Example: The problem of dark matter and dark energy. In Λ CDM they are described phenomenologically, but their nature remains unknown. AU offers **an interpretation**: dark matter as unmanifested modes, dark energy as global entropy.

4.2. New Questions for Research

The AU framework **poses questions** that are often not formulated in the mainstream:

- Can entropy be a fundamental quantity rather than a derived one?
- Can non-locality be a fundamental property of reality rather than a consequence of quantum mechanics?
- Can consciousness be an active field rather than an epiphenomenon?
- Can life play a role in cosmological evolution?
- Can information be a substance rather than a property?

These questions are **open** and require research.

4.3. A Tool for Interdisciplinary Projects

The AU framework is especially useful for **interdisciplinary projects** where one needs to link physics, biology, computer science, and philosophy. It provides **a common language** that facilitates communication between specialists.

Example: A project in quantum biology. Biologists study coherence in photosynthesis, physicists study quantum effects, philosophers study the problem of consciousness. AU offers **a unified language** (thought-form entropy, coherence, non-local kernel) that can link these areas.

4.4. Freedom for Speculative Thinking

In the mainstream there is **pressure of publication productivity**: one must publish in top journals, follow established paradigms, avoid speculation. The AU framework is **a space of freedom** where one can explore ideas that do not yet have experimental confirmation but may be conceptually interesting.

This does not mean a lack of rigor. It means **a change of criteria**: instead of “has this been proven experimentally?” — “is this coherent, is it interesting, can it open something new?”

5. What AU Can Potentially Open Up

The AU framework can potentially open **new directions** in various fields.

5.1. In Physics

- **Emergent gravity:** the possibility of deriving Einstein's equations from the dynamics of S_Θ .
- **Emergent constants:** the possibility of deriving the values of α , G , $\hbar$ from the structure of the archive.
- **A new interpretation of the dark sector:** dark matter as unmanifested modes, dark energy as global entropy.
- **A new interpretation of CP violation and baryogenesis:** asymmetry of twists in the archive.
- **Quantum gravity through emergence:** space-time as an emergent structure of the field S_Θ .

5.2. In Cosmology

- **Evolution of $w(a)$:** the possibility of explaining DESI 2025 data through the dynamics of S_Θ .
- **The early Universe:** the possibility of variation of constants in the early Universe.
- **The noospheric transition:** the possibility of linking the evolution of life and consciousness with cosmological evolution.
- **Panspermia as an informational process:** the possibility of the spread of life through non-local correlations.

5.3. In Biology

- **Quantum biology:** the possibility of explaining coherence in photosynthesis, magnetoreception, and enzymatic catalysis through the dynamics of S_Θ .
- **Biophotonics:** the possibility of linking biophoton emission with thought-form entropy.
- **Microbial cognition:** the possibility of describing bacterial behavior through an informational-entropic language.
- **Psychoneuroimmunology:** the possibility of linking the placebo effect with the dynamics of S_Θ .

5.4. In Computer Science and AI

- **AU chips:** the possibility of creating quantum-correlation processors interfacing with the AU field.

- **Neuromorphic computing:** the possibility of linking neuromorphic systems with the dynamics of S_θ .
- **AI as an entropy amplifier:** the possibility of describing AI as a system generating thought-forms.

5.5. In Philosophy and Methodology of Science

- **Ontology of information:** the possibility of developing an ontology in which information is fundamental.
 - **Philosophy of time:** the possibility of linking kairos-time with philosophical theories of time.
 - **Methodology of interdisciplinary research:** the possibility of developing criteria for evaluating interdisciplinary theories.
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6. What New Questions AU Poses

The AU framework **poses questions** that can become the basis for new research programs.

6.1. Fundamental Questions

1. Is information a fundamental substance, or is it derived from something deeper?
2. Can entropy be primary and energy secondary?
3. Is non-locality a fundamental property of reality?
4. Can consciousness be an active field rather than an epiphenomenon?
5. What is the role of life and consciousness in cosmological evolution?

6.2. Formal Questions

1. What is the explicit form of the non-local kernel $K(x, y)$?
2. What is the spectrum of the operator $\hat{L} = \omega_0^2 - \tilde{\mu}\Phi + \hat{K}$?
3. How can Maxwell's, Einstein's, and Schrödinger's equations be derived from the dynamics of S_θ ?
4. How can the parameters of the AU model be linked quantitatively to observable quantities?

6.3. Empirical Questions

1. Are there correlations between entropic parameters and observable quantities?
2. Did constants vary in the early Universe?

3. Are there anomalies in LHC, LIGO, DESI data that are not explained by the mainstream?
 4. Are there non-local correlations between biological systems?
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7. What Remains Unknown and Little Explored

One of the main values of the AU framework is that it **points to areas** that today are almost unexplored.

7.1. Non-local Correlations in Biology

Although quantum biology is actively developing, **non-local correlations** in biological systems remain little studied. AU offers a language for describing them, but experimental studies are still isolated.

What can be studied:

- Biophoton communication between cells,
- Non-local effects in collective practices (meditation, group intentions),
- Correlations between biological systems at a distance.

7.2. Entropy Radiation

The concept of **entropy radiation** is new and almost unexplored. It predicts that any objects with a high rate of entropy growth emit coherent waves of the AU field.

What can be studied:

- The search for entropy radiation from biological systems,
- Correlations between entropy radiation and other observable quantities,
- The possibility of detecting entropy radiation from astrophysical objects.

7.3. Kairos-Time

The concept of **kairos-time** — event-saturated time — has hardly been studied experimentally.

What can be studied:

- Subjective perception of time in different states of consciousness,
- Correlations between kairos-time and entropic parameters,
- The role of kairos-time in biological processes.

7.4. The Noospheric Transition

The concept of the **noospheric transition** — the transition to planetary consciousness — remains theoretical.

What can be studied:

- Correlations between global events and entropic parameters,
- The role of collective consciousness in cosmological evolution,
- The possibility of conscious influence on the noospheric transition.

7.5. The Dark Sector as Unmanifested Modes

The interpretation of **dark matter and dark energy** as unmanifested modes of the AU field is new and almost unexplored.

What can be studied:

- Topological criteria for unmanifested modes,
 - The connection of unmanifested modes with the observed density of dark matter,
 - The possibility of detecting unmanifested modes.
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8. Where One Can Earn

This section is practical. The AU framework can be **financially supported** through various channels.

8.1. Grants for Interdisciplinary Research

Many foundations support **interdisciplinary projects** that link physics, biology, computer science, and philosophy. The AU framework is ideally suited for such projects.

Examples of foundations:

- **Templeton Foundation** — supports research at the intersection of science, philosophy, and theology,
- **Fetzer Institute** — supports research on consciousness and spirituality,
- **John Templeton Foundation** — supports research on fundamental questions,
- **European Research Council (ERC)** — supports interdisciplinary projects,
- **National Science Foundation (NSF)** — supports interdisciplinary research.

8.2. Grants for Fundamental Physics

Some foundations support **fundamental research** in physics, even if it is speculative.

Examples:

- **FQXi (Foundational Questions Institute)** — supports research on foundational questions in physics,
- **Templeton Foundation** — supports research on fundamental questions,
- **Breakthrough Prize** — supports fundamental research.

8.3. Publications in Open Journals

The AU framework can be published in **open journals** that accept speculative works.

Examples:

- **Zenodo** — an open repository for scientific works,
- **arXiv** — an open preprint server,
- **ResearchGate** — a platform for scientific publications,
- [Preprints.ru](https://preprints.ru) — a Russian preprint server,
- **PhilPapers** — for philosophical works.

8.4. Conferences and Seminars

The AU framework can be presented at **conferences and seminars** devoted to fundamental questions.

Examples:

- Conferences on quantum biology,
- Conferences on the philosophy of consciousness,
- Conferences on cosmology,
- Conferences on interdisciplinary research.

8.5. Books and Monographs

The AU framework can be developed into a **book or monograph**, which opens additional opportunities for funding.

Examples of publishers:

- Springer,
- Cambridge University Press,

- Oxford University Press,
- World Scientific.

8.6. Consulting and Expertise

Specialists in the AU framework may be in demand as **consultants** in projects related to interdisciplinary research, philosophy of science, and ethics of technology.

9. Why This Framework Is for Those Who Have Preserved Their Curiosity

This section is about **values**. About for whom this framework is.

9.1. For Those Who Are Not Afraid of Open Questions

The AU framework is **a space of open questions**. There are no ready answers here, no dogmas, no authorities. Here there is **an invitation to research**.

Those who seek ready answers will find them in textbooks. Those who seek **new questions** will find them here.

9.2. For Those Who Have Preserved Their Curiosity

A scientific career often **extinguishes curiosity**: one must publish, meet expectations, follow the mainstream. The AU framework is **a reminder** that science begins with curiosity.

Those who have preserved the ability to be surprised, to ask “childish” questions, to seek unusual connections — will find here **a space for work**.

9.3. For Those Who Are Ready for Interdisciplinarity

The AU framework requires **breadth**: physics, biology, computer science, philosophy. Those who are ready to go beyond the limits of their narrow specialization will find here **new horizons**.

9.4. For Those Who Are Not Afraid of Speculation

The AU framework is **a speculative construct**. Those who are not afraid to work with hypotheses that are not yet confirmed experimentally will find here **room for creativity**.

9.5. For Those Who Understand the Value of Ontological Language

The AU framework is above all **a language**. Those who understand the value of language for science will find here **a tool for rethinking** familiar areas.

10. What AU Can Give in the Long Term

If the AU framework is developed, it can lead to the following results.

10.1. A Unified Ontology for Physics, Biology, and Computer Science

AU can become **a unified language** for describing all levels of reality — from elementary particles to consciousness.

10.2. New Experimental Programs

AU can stimulate **new experiments**: the search for entropy radiation, non-local correlations, anomalies in LHC, LIGO, DESI data.

10.3. New Technologies

AU can stimulate **new technologies**: AU chips, AU drives, AU interfaces.

10.4. A New Understanding of Consciousness

AU can lead to **a new understanding of consciousness** as an active field rather than an epiphenomenon.

10.5. A New Understanding of the Role of Life in the Cosmos

AU can lead to **a new understanding** of the role of life and consciousness in cosmological evolution.

11. Invitation

This article is **an invitation**. Not to accept AU, but to **research it**.

We do not claim that AU is the truth. We claim that AU is **an interesting hypothesis** that may be useful for research.

We do not claim that AU will replace the mainstream. We claim that AU can **supplement** it.

We do not claim that AU will give ready answers. We claim that AU **poses new questions**.

If you feel that in your field there are **unresolved questions** that do not yield to mainstream approaches — try the AU framework.

If you feel that **interdisciplinarity** is your path — try the AU framework.

If you feel that **curiosity** is the main thing in science — try the AU framework.

If you feel that **speculative thinking** is not a sin but a virtue — try the AU framework.

12. Conclusion

The Acta Universi hypothesis is **a framework** and **a bridge**. A framework for describing reality in terms of thought-form entropy. A bridge between physics, biology, computer science, and philosophy.

It gives the researcher:

- A new language for old problems,
- New questions for research,
- A tool for interdisciplinary projects,
- Freedom for speculative thinking.

It can potentially open up:

- New directions in physics,
- New interpretations in cosmology,
- New connections in biology,
- New technologies in computer science,
- New approaches in philosophy.

It poses questions that can become the basis for **new research programs**.

It points to areas that today are **almost unexplored**.

It opens opportunities for **funding** through interdisciplinary grants.

And most importantly — it is for those who have **preserved their curiosity**.

This article is not a scientific work in the strict sense. It is an invitation. If you are ready to accept it — begin by reading the previous works of the AU cycle. If you are ready to go further — begin to research. If you are ready to contribute — begin with questions.

End of article. If you wish to continue reading — turn to the works of the AU cycle on Zenodo. If you wish to begin research — begin by formulating your first question.

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