VOL 1

From Gap to World Pre-Ontology, Indimergence and the End of Representational Physics

Timothy Speed

Operatoric Research Corpus - Studies in World-Formation

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Studies in World-Formation

Section I

Ontology and Physics

Volume 1

From Gap to World

Pre-Ontology, Indimergence and the End of Representational Physics

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From Gap to World – Pre-Ontology, Indimergence and the End of Representational Physics

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Abstract

This volume assembles four conceptual papers that articulate the foundations of an operator-based ontology of world-formation. The texts develop a framework in which reality is not primarily understood through objects, entities, or representational access, but through structural responses to conditions of non-integrability.

The starting point is the concept of the gap as a primary condition of reality. Rather than representing a deficit of knowledge or an incomplete ontology, the gap denotes the structural impossibility of complete self-identity within reality itself. From this perspective, operators are not entities or causal agents but response structures through which reality stabilizes itself under conditions of non-closure.

Building on this foundation, the second paper diagnoses a broader conceptual transition within contemporary physics. Phenomena such as dark energy, the measurement problem, and global cosmological structures increasingly resist explanation in object-centered ontologies. The proposed response-based framework interprets these phenomena as structural reactions to limits of integration rather than as missing entities.

The third and fourth papers extend this framework to the ontological status of the observer. Instead of presupposing the observer as a subject, cognitive system, or measurement point, observation is analyzed as a structural achievement of world-formation. The observer emerges where reality stabilizes itself locally under conditions of openness. In this sense, perception does not represent a pre-given world but participates in the stabilization of world itself.

The final text formulates this claim categorially by interpreting the observer as a topological inversion of world—a spatial operation through which perspective, coherence, and local intelligibility become possible.

Taken together, the four papers outline a pre-ontological framework in which:

- reality is structured by gaps rather than substances,
- operators appear as responses to non-integrability,
- physical phenomena signal limits of object-centered ontology,
- and observers arise as structural foldings of world rather than as agents within it.

The volume does not present a closed theory but establishes a conceptual position from which problems in physics, epistemology, and consciousness research can be reinterpreted without introducing additional ontological entities.

Keywords: operatoric ontology, gap ontology, response ontology, observer theory, world formation, non-representational epistemology, philosophy of physics, quantum measurement problem, dark energy ontology, topological observer, pre-ontology, neurodivergent, epistemology, indimergence, MNO theory

Contents

Series Introduction

(Section I – Ontology and Physics)

The volumes collected in this section belong to a larger research project that investigates the conditions under which world can arise and persist as a historically effective structure. While modern physics has achieved an extraordinary level of mathematical precision and empirical success, several persistent problems indicate that certain questions concerning the emergence of world itself remain insufficiently addressed within existing theoretical frameworks.

Among these problems are the measurement problem of quantum mechanics, the status of wave function collapse, the direction of time, the ontological interpretation of information, and the relation between physical processes and conscious experience. Although these questions

appear in different domains of research, they share a common structural feature: they concern transitions between openness and factual stabilization. In many cases, these transitions are interpreted as dynamical processes within an already established world. The present research program explores the possibility that this assumption itself contributes to the persistence of these problems.

The texts assembled in this section therefore approach these questions from a different angle. Instead of beginning with physical mechanisms or mathematical models, they examine the ontological conditions under which world can appear at all as a stable context for physical description. This perspective does not aim to replace physical theories or to modify their equations. Rather, it investigates the structural presuppositions that make physical explanation possible in the first place.

For this purpose, the section is organized into four volumes that develop the argument in successive steps.

Volume 1 introduces a pre-ontological framework in which reality is understood not primarily through objects or entities, but through structural responses to conditions of non-integrability. Concepts such as the gap, operator, and observer are analyzed as elements of world formation rather than as pre-given components of reality.

Volume 2 examines several foundational problems in physics from this perspective, including the measurement problem, collapse interpretations, black holes, renormalization, and vacuum energy. These phenomena are interpreted not primarily as unresolved technical questions but as indications of structural limits of object-centered description.

Volume 3 develops the concept of ontological recurrence within the MNO model (Submergence–Indimergence–Emergence) and applies it to the relation between quantum measurement, time, and conscious experience. In this context, the distinction between ordinary measurement and phenomenal actualization is analyzed as a difference in the structural conditions under which possibility becomes factual.

Volume 4 finally reflects on the broader implications of these considerations for the status of physical theories themselves. It introduces a categorical distinction between theoretical correctness and world-founding capacity and examines how this distinction sheds new light on questions concerning time direction, simulation, information, and fundamental physical limits.

Taken together, the volumes do not constitute a closed theoretical system. They should instead be read as exploratory contributions within a broader operator-based research program that investigates the conditions of world formation across physics, philosophy, and consciousness research.

The aim of the present section is therefore not to replace existing theories, but to clarify the ontological framework within which such theories acquire their meaning and their limits.

Introduction

Modern science operates within a peculiar tension. On the one hand, it is extraordinarily successful in describing phenomena mathematically, producing technological applications, and stabilizing empirical relations. On the other hand, in central areas problems are accumulating that can only be formulated with increasing difficulty within the established ontological categories.

In physics, phenomena such as dark energy, quantum measurement, or global cosmological dynamics appear that are empirically effective without being convincingly stabilizable as objects, fields, or mechanisms. In epistemology, the observer is presupposed on the one hand, while on the other hand the observer's role in measurement processes and conflicts of perspective generates fundamental paradoxes. In social and political contexts, it finally becomes apparent that reality is not simply given, but can be stabilized—or withdrawn—under certain structural conditions.

The texts assembled here start from the assumption that these difficulties are not accidental. Rather, they may indicate that a fundamental ontological schema has reached its limits—the schema of a world composed of stable things, objects, or entities that can be described through properties and causal relations.

This book brings together four conceptual works that develop an alternative approach to this problem field. What they share is the attempt to think reality not primarily from its stabilized forms, but from the conditions under which stabilization becomes possible at all.

The starting point of this perspective is the concept of the gap. The concept was originally developed in the book *The Physics of the Poor*. In the reading developed here, the gap does not denote a lack of knowledge nor a provisional incompleteness of theory. Rather, it designates a structural property of reality itself: the impossibility of complete self-identity. Reality never fully coincides with itself. A difference always remains between what exists and the structures that can integrate or stabilize this existence.

If reality cannot be completely integrated, tensions or fractures emerge at certain points within existing orders. The theory proposed here describes the forms in which reality responds to such non-integrabilities as operators. Operators are not things, forces, or agents. They are structural responses to situations in which existing orders reach their limits.

Against this background, the second text of this volume proposes a diagnosis of certain developments in modern physics. Many of the most difficult problems of contemporary physics arise precisely where phenomena are dynamically effective but cannot be convincingly formulated as objects or fields. Instead of interpreting these phenomena as missing entities, the proposal is to read them as responses of systems to limits of integration. Physical reality thus appears not only as an ensemble of things, but also as a structure of reactions to structural limits.

The two subsequent texts shift this perspective to the question of the observer. In most scientific models the observer is implicitly presupposed: as a subject, a measuring device, a

cognitive system, or at least an information processor. Yet this assumption generates a series of well-known difficulties—especially where different observers arrive at incompatible descriptions of the same reality.

The position developed here proposes to address this problem at an earlier point. Instead of asking how an observer knows, the question becomes under which ontological conditions an observer can arise at all.

The third text of this volume develops the concept of the constructed observer. Perception is not understood as the representation of an already given world, but as a process through which reality becomes locally stabilized. Observers are not primary instances in this perspective, but emergent structures that arise where reality temporarily organizes itself coherently under conditions of openness.

The fourth text finally formulates this thesis in categorical form: the observer is described as a topological inversion of the world. Observation is therefore not a process that takes place within an already existing world, but a spatial operation through which the world becomes locally organized in perspective.

In this reading the observer is neither a subject nor an entity within the world. Rather, observation arises where reality folds at points of structural non-integrability and thereby produces zones of perspective, coherence, and efficacy.

The four texts of this volume therefore do not constitute a closed theory but a conceptual positioning. They propose a shift in perspective: away from an ontology of stable things and toward an ontology of differences, limits of integration, and responses to structural non-identity.

Within such a perspective, reality appears not primarily as an accumulation of objects, but as a configuration of processes of stabilization. Order is not origin but a response to a gap. Observers are not the foundation of the world, but one of its possible forms.

The ambition of these texts is therefore not to postulate new entities or to replace existing theories. Their aim is to open a conceptual space in which central problems of physics, epistemology, and observer theory can be read anew under altered ontological assumptions.

The Gap as a Condition - Pre-Ontological Operatorics and the Primacy of Response

DOI: **10.5281/zenodo.18015743**

Abstract

This paper formulates a theoretical interim position on the role of operators within a pre-ontological framework. It starts from the observation that central phenomena of modern physics, social theory, and epistemic practice cannot be understood as entities, fields, or things without generating paradoxes. Instead, it proposes to conceive of operators as response structures to non-eliminable gaps. The gap thus appears not as a deficit or lack of knowledge, but as a constitutive condition of reality. The aim of the text is not to provide a final theory, but to secure a conceptual framework within which the gap can be worked with, without closing it ontologically.

This paper is situated within the context of MNO theory, specifically in relation to:

Speed, T. (2025). The Constructed Observer - World-Formation Beyond Representation - Why Perception Is Not Representation, but a Structural Achievement (2 English). Zenodo. https://doi.org/10.5281/zenodo.18006170

Speed, T. (2025). MNO and Ontological Recurrence: A Non-Representational Account of Quantum Measurement and Conscious Experience (Version 1). Zenodo. https://doi.org/10.5281/zenodo.17913823

Speed, T. (2025). Orch-OR with Recurrence: A Minimal Dynamical Condition for When Objective Reductions Yield Conscious Experience (1 English). Zenodo. https://doi.org/10.5281/zenodo.17942531

Speed, T. (2016/2025) The Physics of the Poor: A Neurodivergent Meta-Theory of Consciousness (Artistic Research - Critical Neurodiversity and Science) ISBN : 3695191287

Speed, T. (2025). The All–Nothing Paradox - Ontological Openness as a Condition of World-Formation - Why Closure – Not Complexity – Marks the Limit of Artificial Systems (2 English). Zenodo. https://doi.org/10.5281/zenodo.18000820

1. Problem Statement: When the Operator Is Not a Thing

In many theoretical contexts, it is implicitly assumed that explanatory factors must be formulable as entities: as things, fields, forces, or at least as clearly localizable structures. This assumption reaches its limit, however, wherever phenomena occur that are real and effective without being ontologically stabilizable.

The concept of the operator used here is different from the outset. It does not denote a something, but an effect of structural non-identity. The operator is neither cause nor substance, but a form of response to a structural non-identity. This shifts the categorical question: no longer *what is it?*, but *what does it respond to?*

2. The Gap as a Primary Category

Within this framework, the gap is not understood as a lack:
• not as a gap in knowledge,
• not as an ontological hole,
• not as a temporary remainder of explanation.

Rather, it appears as a primary condition. The gap designates the impossibility of complete self-identity of reality. Something is real without being fully integrated, closed, or stabilized.

Without a gap there would be:
• no gravitation (no falling),
• no emergence (no difference),
• no expansion (no withdrawal),
• no meaning (no response).

The gap is thus not an error of the world, but its operative precondition.

3. Operators as Forms of Response

If operators are not ontological, then they are not agents either. They do not "do" anything in an intentional sense. They respond, insofar as reality must respond to its own non-closure.

Examples:
• Gravitation can be read as a physical response to spatial non-identity.
• Cosmic expansion can appear as a response to non-integrable global emergence.
• Social institutions respond to structural incoherences between value and reality.
• Epistemic practices respond to translation breaks between world and subject.

The operator is thus neither thing nor law, but a mode of response.

4. Paradox as a Fundamental Condition

Where ontology ends, emptiness does not appear, but paradox. This paradox is not a logical error, but an expression of the fact that reality is effective without being fully formulable.

Characteristic of this condition are:
• effectiveness without localizability,
• reality without full integration,
• order without origin.

Attempts to resolve this paradox ontologically regularly lead to theory inflation, metaphysics, or simulation. The approach presented here instead proposes to accept paradox as a working condition.

5. What Kind of World Do We Live In?

If reality primarily consists of responses to gaps, then we do not live in a world of stable things, but in a world of ongoing regulation.

This world is:
• not closed,
• not fully controllable,
• not definitively explainable.

Stability is secondary. Order is always a response, never an origin. Control remains local.

This insight has consequences far beyond physics – for work, value, the state, subjectivity, and knowledge itself.

6. Knowledge as Gap Competence

Within such a conception of the world, knowledge is not access to being, but a form of resonance capacity toward that which cannot be closed.

Knowledge then means:
• not resolution,
• not domination,
• but orientation within the non-identical.

This perspective brings non-standardized, non-representational forms of knowledge to the center – not as a deficit, but as a structural competence.

7. Conclusion: An Open Interim Position

This paper does not claim completeness or closure. It secures a position of thought at which it becomes clear that the concept of the operator is only meaningful if read pre-ontologically. The gap is not a problem to be eliminated, but the condition under which reality becomes capable of response at all.

The further elaboration of this framework – formal, empirical, or political – remains open. Not out of vagueness, but out of consequence.

From Objects to Responses - On the Loss of Ontological Sovereignty in Contemporary Physics

DOI: 10.5281/zenodo.18017629

Abstract

Modern physics increasingly encounters phenomena that are empirically real and dynamically effective, yet resist formulation as objects, fields, or causal mechanisms. Dark energy, dark matter, black holes, and the quantum measurement problem all share this structural feature: they are operationally indispensable but ontologically opaque. This paper argues that these difficulties are not accidental but indicate a deeper conceptual shift. Physics is undergoing a transition from an object-centered ontology toward a response-based framework, in which reality is structured by how systems respond to limits of integration rather than by what entities fundamentally exist. This meta-paper articulates this shift explicitly, framing it as a loss of ontological sovereignty of the material object model and the emergence of response as a primary category of physical intelligibility.

Dieses Paper stands in Relation to:

Speed, T. (2025). The Gap as a Condition - Pre-Ontological Operatorics and the Primacy of Response (2 English). Zenodo. https://doi.org/10.5281/zenodo.18015885

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Speed, T. (2025). The Constructed Observer - World-Formation Beyond Representation - Why Perception Is Not Representation, but a Structural Achievement (2 English). Zenodo. https://doi.org/10.5281/zenodo.18006170

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Speed, T. (2025). Dark Energy as an Emergent Residuum - A Minimal Operator-Based Interpretation within an MNO Framework (2 English). Zenodo. https://doi.org/10.5281/zenodo.18015172

1. The Problem: When What Works Cannot Be a Thing

Contemporary physics is saturated with entities that function mathematically and empirically, yet fail to stabilize ontologically. The cosmological constant, dark energy, dark matter, and information-theoretic quantities exert real effects without behaving like classical objects, fields, or substances.

The prevailing strategy has been pragmatic tolerance:
if a term works, it is retained; if it lacks ontology, that deficit is postponed. This strategy is successful computationally, but it masks a growing conceptual tension:

Physics increasingly relies on effective structures that cannot be grounded in the ontology it officially presupposes.

This paper proposes that this tension signals not an incomplete ontology, but the exhaustion of the object-centered explanatory monopoly itself.

2. Ontological Sovereignty and Its Limits

By *ontological sovereignty* is meant the implicit assumption that:

- material objects (or fields as object-surrogates)
- are the primary bearers of reality,
- and that all physical efficacy must ultimately be traced back to them.

Historically, this assumption has been extraordinarily productive. However, its scope has narrowed. The more global, boundary-like, or integrative a phenomenon becomes, the less convincingly it can be reduced to an object or mechanism.

Dark energy exemplifies this limit case: it is real, global, homogeneous, dynamically decisive—and yet resists all attempts at objectification.

3. A Structural Diagnosis: Response Without Cause

The common feature of these problematic phenomena is not mystery, but structure. They appear precisely where systems encounter limits:

- limits of local stabilization,
- limits of global integration,
- limits of representability.

At such limits, systems do not generate new objects.
They respond.

This response is not causal in the classical sense. It is not driven by a new entity or force, but by the impossibility of further integration within existing structures.

Response here denotes a mode of physical intelligibility that is triggered by constraint, not by cause.

Response does not denote feedback or regulation within a stable system.
It denotes a structural shift in how physical intelligibility is organized once further integration within the existing framework becomes impossible.

Response here marks the point of structural breakdown; questions of how form re-emerges thereafter belong to a separate problem of recurrence. (MNO)

Response does not presuppose an underlying entity or process.
It marks the point at which non-integrable differentiation forces a reorganization of the conditions under which form can appear.

Response should not be confused with phase transitions or critical phenomena, which describe transitions within an integrated theoretical framework, whereas response marks the breakdown of the framework's integrative capacity itself.

4. From Objects to Responses: A Conceptual Shift

This observation motivates a fundamental reordering of explanatory priority:

Classical paradigm	Response-based paradigm
Objects are primary	Limits are primary
Causes generate effects	Integration limits trigger responses
Structure explains dynamics	Dynamics express structural failure
Ontology precedes behavior	Behavior reveals ontological limits

In this view, matter, fields, and forces remain indispensable—but they no longer monopolize physical explanation. They are joined by a different category: response to non-integrability.

5. Historical Trajectory: A Loss of Ontological Privilege

Seen in retrospect, modern physics has repeatedly weakened the sovereignty of objects:

1. Classical mechanics privileged material bodies.
2. Field theory displaced objects with extended structures.
3. Relativity dissolved the background stage itself.

4. Quantum theory undermined intrinsic properties.
5. Information theory introduced non-material efficacy.

The present step is not anomalous. It is the next logical move:

From entities that act, to systems that respond.

What changes is not the content of physics, but its explanatory grammar.

6. Dark Energy as a Paradigmatic Case

Within this framework, dark energy is not a missing object, nor a hidden substance. It is the cosmological expression of a response:

- local structures emerge and stabilize,
- their cumulative differentiation exceeds global integrability,
- spacetime responds through expansion.

Dark energy is thus not an ontological primitive, but a response signature—a name for what happens when no further stabilization is possible.

7. Consequences for Physical Explanation

If this response-based reading is taken seriously, several consequences follow:

- Not all real effects require ontological carriers.
- Some physical terms function as boundary indicators rather than causes.
- Explanation can consist in identifying *why a response occurs*, not *what causes it*.

This does not weaken physics. It clarifies its limits.

8. Conclusion: Physics After Sovereignty

The central claim of this paper is not that objects are irrelevant, but that they are no longer sovereign. Physical reality is increasingly structured by how systems answer to their own limits.

The universe is not only something that is, but something that responds.

Recognizing this does not end physics—it makes explicit the conceptual transition already underway.

Canonical 5-Sentence Sequence

1. Gap denotes the primary non-identity of reality with itself and is not an entity, but the condition under which integration can become problematic at all.

2. Difference arises when reality locally takes form without this form fully coinciding with the totality of its conditions.
3. Block occurs when this difference can no longer be integrated and existing structural or explanatory levels lose their capacity to hold it.
4. Response does not denote a process or mechanism, but the conversion of non-integrability into a change in the conditions under which form can appear at all.
5. Recurrence is the renewed stabilization of form under these altered conditions, through which the world becomes ontologically accessible again.

Optional one-line positioning

This paper articulates a meta-level shift in contemporary physics from object-centered ontology toward response-based intelligibility, framing dark energy and related phenomena as structural responses to limits of integration rather than as missing entities.

This paper does not explain new phenomena—it explains why certain phenomena evade our existing modes of explanation.

The Constructed Observer - World-Formation Beyond Representation

Why Perception Is Not Representation, but a Structural Achievement

DOI: 10.5281/zenodo.18006103

Abstract

This paper develops an ontological theory of the observer that does not understand the observer as a given subject, measurement point, or cognitive instance, but as a structurally produced form of world-formation. The point of departure is the observation that, both in physics and in the philosophy of mind, the observer is mostly implicitly presupposed, even though observer-dependence generates central problems such as measurement, perspective conflicts, and reality splits.

With the concept of the constructed observer and the reality eye, it is shown that perception is not the representation of a given world, but an operative stabilization of reality itself. The observer is thus not a point, but an emergent structure that arises from specific feedback conditions.

This perspective allows for a new reading of observer-dependence in quantum mechanics (including Wigner's Friend), a precise delimitation from representationalist and purely enactive approaches, as well as an ontological grounding of political and medial reality: power does not act only on contents, but on the conditions under which observer structures can emerge at all.

In the context of:

Speed, T. (2025). MNO and Ontological Recurrence: A Non-Representational Account of Quantum Measurement and Conscious Experience (Version 1). Zenodo. https://doi.org/10.5281/zenodo.17913823

Speed, T. (2025). Orch-OR with Recurrence: A Minimal Dynamical Condition for When Objective Reductions Yield Conscious Experience (1 English). Zenodo. https://doi.org/10.5281/zenodo.17942531

Speed, T. (2016/2025) The Physics of the Poor: A Neurodivergent Meta-Theory of Consciousness (Artistic Research - Critical Neurodiversity and Science) ISBN : 3695191287

Speed, T. (2025). The All–Nothing Paradox - Ontological Openness as a Condition of World-Formation - Why Closure – Not Complexity – Marks the Limit of Artificial Systems (2 English). Zenodo. https://doi.org/10.5281/zenodo.18000820

1. Introduction – The Problem of the Implicit Observer

The observer is among the most frequently used yet least explained concepts of modern science. In physics, it functions as a measuring instance; in cognitive science, as a subject or system; in philosophy, as an epistemic standpoint. In all of these cases, the observer is presupposed rather than derived.

This implicit presupposition becomes problematic where observer-dependence itself becomes the object of inquiry: in quantum mechanics, in perspective conflicts, and in political and medial realities. When different observers arrive at incompatible descriptions of reality, it is no longer sufficient to refer to different information or measuring devices.

This paper therefore poses a prior question:
Under which ontological conditions does an observer arise at all?

2. The Observer Is Not a Point

In many theories, the observer appears as a localizable point: a subject, a brain, a measuring device, an information node. This point-like character, however, is itself already a theoretical decision, not an ontological necessity.

The approach proposed here proceeds from a different assumption:
An observer is not an elementary unit, but an emergent structure.

It arises where reality is not only stabilized, but simultaneously enters into relation with itself. Observation is not an external access to the world, but an internal process of world-formation. The observer is thus not the origin of perspective, but its product.

3. The Reality Eye

In order to specify this structure, this paper introduces the concept of the reality eye. What is meant by this is neither an organ, nor a metaphor, nor a center of consciousness, but a structural interface in which openness and stabilization of reality interlock.

The reality eye designates the condition under which reality becomes visible to itself. It is neither purely subjective nor objective, but an operative zone in which world takes form. Perception, in this sense, is not representation, but a stabilizing performance through which reality becomes temporarily consistent.

The reality eye is not an object with identifiable properties, but a structural condition that can only be recognized indirectly through its effects: the stabilization of perspective, the coherence of world, and the possibility of coordinated reality.

4. Delimitation from Representationalism

Representationalist models assume that an already existing world is internally mapped, modeled, or represented. Perception appears here as a secondary access to a primary reality.

The approach of the constructed observer reverses this relation:
It is not the world that is perceived; rather, perception brings world into being.

This does not deny that there are physical or material conditions. It does, however, deny that these conditions already exist as "world" prior to being stabilized through observer structures.

5. Connection and Difference to Enactive Approaches

Enactive and relational approaches—such as those of Francisco Varela or Karen Barad—have decisively contributed to thinking perception as an active enactment of world.

The approach developed here shares this departure from representationalism, but goes one step further: it does not only ask how world is enacted, but under which ontological conditions an observer can arise at all who enacts.

The observer is not anthropologically privileged, but structurally contingent. This makes the transition from ontology to society possible.

Whereas enactive approaches explain how cognitive systems enact world, the approach presented here asks for the ontological conditions under which an observer can arise at all as a world-forming structure. The observer is not the starting problem, but the result to be explained.

6. Observer-Dependence and Wigner's Friend

In thought experiments such as Wigner's Friend, it becomes visible that different observers can arrive at incompatible descriptions of reality. Classical interpretations attempt to resolve this conflict through differences in information or epistemic limitations.

The approach of the constructed observer allows for a different reading:
The conflict does not arise between descriptions, but between different structures of world-formation. Observers do not share the same reality because they do not possess the same ontological observer form.

7. Political and Medial Reality

If observers are structurally produced, reality itself is political. Power then does not operate only through contents, discourses, or narratives, but through the conditions under which observer forms can emerge, remain stable, or be excluded.

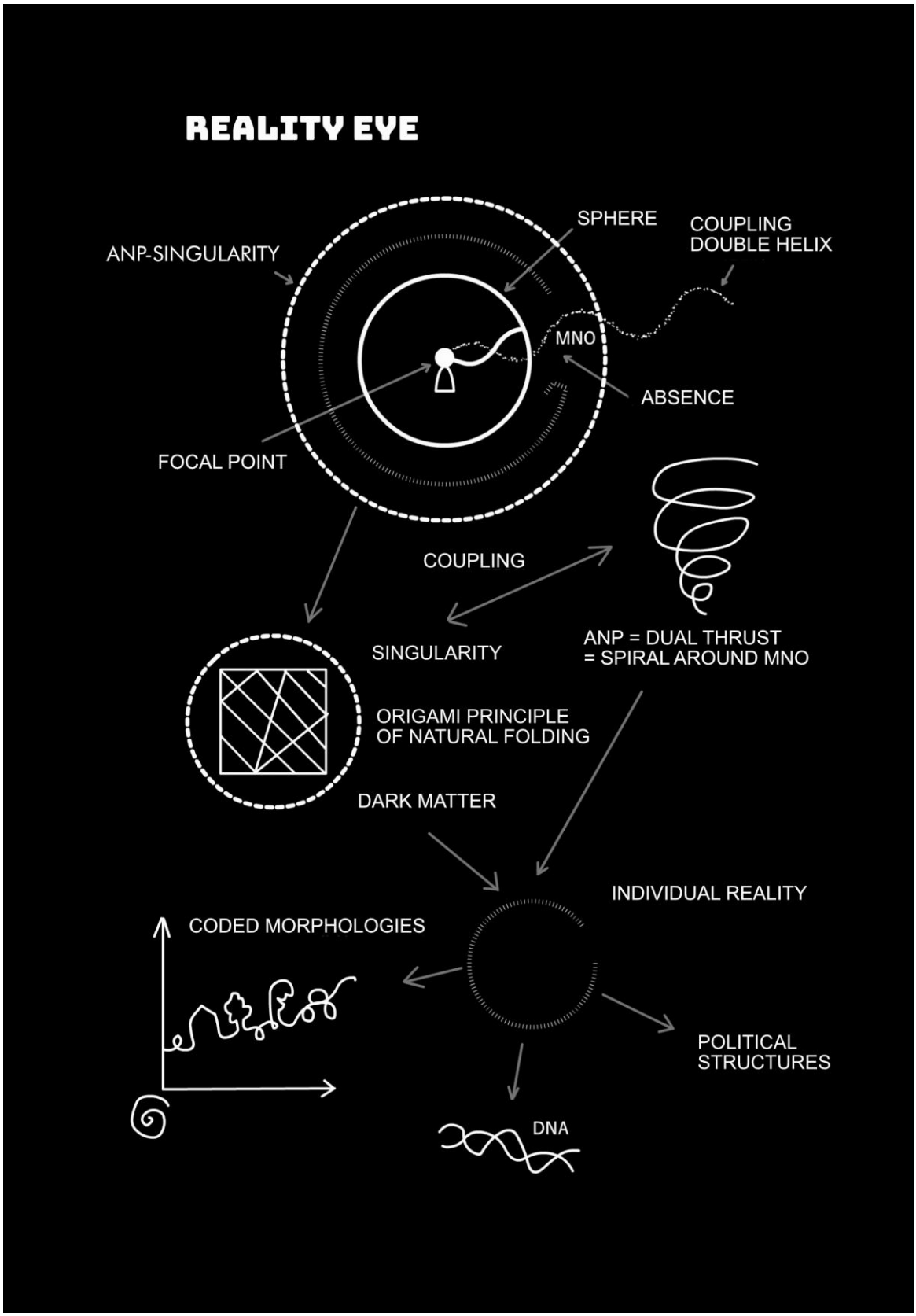
Poverty, medial marginalization, or institutional violence can thus be understood as interventions into world-forming capacity. Those who are not stabilized as observers lose not only voice, but world.

8. Conclusion

The observer is not a neutral point, but a fragile form that is historically and structurally produced. The concept of the constructed observer and the reality eye makes visible that perception is not representation, but an ontological achievement.

In this way, a bridge is drawn between physics, epistemology, and political reality. World is not simply given. It is made—or withheld.

Figure 1 illustrates the reality eye as a structural coupling zone between ontological openness (ANP), stabilization (MNO), and the formation of individual, biological, and political realities. The representation is not to be understood metaphorically, but as a schematic depiction of ontological transitions.
The theory developed here does not present itself as a complete theory of coordination between observers, but as an ontological clarification of the conditions under which such coordination becomes possible at all.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The Observer as a Spatial Category - On the Topological Inversion of World and the Ontological Structure of Observation

DOI: 10.5281/zenodo.18018404

Abstract

The present text formulates an explicit ontological thesis that has already been implicitly contained in previous works on world-formation, the constructed observer, and ontological openness, but has so far not been articulated categorially:

The observer is not an entity, not a subject, and not a localizable point in space, but a space-internal operation—more precisely, a topological inversion or folding of world.

Observation is not understood here as the act of an inner-worldly agent, but as a structural response of space to ontological non-integrability. Where reality cannot be fully stabilized, space folds in such a way that perspective, coherence, and world can appear. In this sense, the observer is not the cause of world, but the form in which world organizes itself locally.

This shift withdraws the ontological ground from the classical subject–object schema, representational models of knowledge, as well as agent-based observer theories. At the same time, it allows a new reading of central problems in physics, consciousness research, and epistemology, without introducing additional entities or mental instances.

The text understands itself as a categorial clarification: not as a new theory of observation, but as a clarification of what observation is ontologically.

This paper stands in relation to:

Speed, T. (2025). The Gap as a Condition - Pre-Ontological Operatorics and the Primacy of Response (2 English). Zenodo. https://doi.org/10.5281/zenodo.18015885 2

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1. Problem Statement: The Implicit Observer

In nearly all scientific disciplines—from physics and cognitive science to social theory—the observer plays a central role. At the same time, the ontological status of the observer usually remains unarticulated. The observer appears as self-evidently given: as a subject, as a brain, as a measuring instance, as an information processor, or at least as a localizable standpoint within an already existing space.

This implicit assumption generates a series of well-known problems: measurement paradoxes, subject–object splits, questions of representation, perspective conflicts, and competing descriptions of reality. What is striking, however, is that these problems do not arise from empirical findings, but from a tacit presupposition concerning the location of the observer.

The present text intervenes at an earlier point. It does not ask how an observer knows, but what an observer is ontologically or pre-ontologically—and whether the observer may be understood at all as something inner-worldly.

The term "pre-ontological" does not designate a provisional state of being, but the structural conditions under which ontology can emerge in the first place.

2. The Categorial Error: The Observer as an Entity

The most widespread assumption is as follows:
The observer is something that is located in space.

Whether conceived as subject, brain, agent, or system, observation is consistently assumed to originate from a unit that is already part of the world and that apprehends, processes, or represents it in some form. Even non-representational approaches often retain this ontological figure, insofar as they conceive the observer as dynamic, embodied, or enactive, yet still treat it as an inner-worldly instance.

The text argues that this involves a categorial error—not because these models are empirically false, but because they rely on a false ontological placement.

Observation is not a process in space.
It is an operation of space.

3. The Observer as Topological Inversion

The central thesis is as follows:

The observer is a topological inversion of world.

This means the following: wherever reality cannot be fully integrated, stabilized, or closed, space responds to this non-identity with itself by locally folding. This folding produces a zone in which world becomes perspectival, coherent, and effective. This zone is the observer.

The observer is thus:

- not a thing,
- not a place,
- not a bearer of properties,

but a spatial operation that emerges from pre-ontological openness.

Observation does not arise through the addition of a subject, but through a structural reconfiguration of space, in which inside and outside, proximity and distance, efficacy and visibility are reorganized.

"Topological" does not designate a formalized mathematical structure here, but a categorial determination of relationality, inversion, and boundary-formation prior to any metric or dynamical description.

The emergence of an observer structure is not a localizable event, but the necessary spatial response at the point where integration structurally fails. It does not explain "why here," but marks "where stabilization remains possible at all."

4. Observation as Response, Not as Access

In this reading, observation is not a form of access to a given world. It is a response structure: a reaction of space to the impossibility of complete self-integration.

Where world can no longer be smoothly, unambiguously, or non-contradictorily stabilized, perspective emerges. Perspective is not an addition, but a symptom of ontological tension.

The observer is therefore not the origin of world, but its local solution under strain.

This shift has far-reaching consequences:

- There is no privileged observer position.
- Observers are not comparable as instances, but as different spatial foldings.
- Perception is not representation, but stabilization under conditions of openness.

5. Delimitation: Neither Subject nor Information System

The ontology proposed here must be explicitly distinguished from:

- subject-philosophical models,
- neurocentric explanations,
- information-based or agent-based observer theories.

Not because these are false, but because they consistently treat the observer as something that observes, rather than as that which makes observation possible.

Information, brain processes, or cognitive dynamics can be understood as secondary effects of particular spatial foldings—but not as their ontological origin.

Neuronal processes are not excluded; within this framework, they appear as local realizations of already completed spatial foldings, not as their source.

6. Consequences

The explicit determination of the observer as a spatial category has several consequences:

1. The subject–object schema loses its ontological status.
2. Knowledge becomes topologically, not mentally, grounded.
3. Differences in perception—such as neurodivergent forms—appear not as deviations, but as different modes of spatial stabilization.
4. The question of consciousness shifts from *What is it?* to *Which spatial operations make it possible?*

7. Conclusion

The concept of space used here cannot be reduced either to physical spacetime or to phenomenal experiential space; it designates the structural condition under which world can appear perspectivally at all.

The present approach is not empirically testable in the sense of individual measurement predictions. Its testability lies in the coherent reinterpretation of existing empirical findings (measurement problem, observer-dependence, perspective inconsistencies), without introducing additional entities or ad hoc assumptions.

The text has not proposed a new theory of observation.
It has made explicit—and rejected—a tacit ontological assumption.

The observer is not in the world.
The world is where it folds.

About the Author

Timothy Speed is an independent artist-researcher working on operator-based ontologies, world-formation, and neurodivergent epistemology.

His work connects philosophy of physics, consciousness studies, and social theory through the framework of operatoric research.

Further publications, papers, and archival materials are available at:

https://timothy-speed.org
https://zenodo.org/communities/operatoric-research-corpus

(The present text constitutes an interface translation into neurotypical academic discourse. This translation functions as an accessibility measure necessitated by dominant linguistic and epistemic conventions. It does not represent the native epistemic form of the research, but a communicative adaptation required for participation in standardized scholarly exchange.)

A more in-depth paper on the methodology can be found here:

Speed, T. (2025). Recursive Knowledge Instead of Additive Knowledge Accumulation - On the Epistemic Structure of Embodied, Neurodivergent Research (Version 1). Zenodo. https://doi.org/10.5281/zenodo.18054997

A paper providing an overview of the work can be found here:

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