Treatise on Ontology

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I. Preface

This short treatise is a condensed presentation of the *ontology of differentiation* [1]. Its aim is to outline, as directly as possible, how differentiation operates across various domains: structure, language, perception, ethics, collectivity.

Differentiation here is treated as the generative basis of all being. A distinction does not describe something already present—it constitutes the very form in which anything appears.

Even unity presupposes differentiation. To identify something as one is to delimit it from what it is not. The concept of unity implies a background of possible alternatives, a field from which unity is extracted as a marked configuration. Without differentiation, there is no boundary, no contour, no coherence—only undifferentiated potentiality that does not present itself.

Being is accessible only insofar as it is articulated. Articulation, in turn, requires selection—an act that institutes a difference between what is retained and what is excluded. Every perception, concept, or event emerges within such a structure. This ontology rests on operational necessity: any claim, experience, or representation already relies on prior acts of differentiation.

What we call systems, subjects, histories, or beliefs are configurations of stabilized distinctions. Each section of this book isolates one such configuration and examines the dynamics by which it holds or transforms.

This is by no means a closed system. The presentation remains modular, fragmentary, and structural. What connects the parts is the recurrence of differentiation in different forms.

This treatise does not propose an alternative scientific theory. Rather, it

[1] For the foundational exposition, see Denys Spirin, *Ontology of Differentiation: Being, Consciousness, and the Game* (2025), ISBN: 978-83-8414-356-8.

offers an *ontological reconstruction* of scientific and symbolic concepts through the lens of differentiation. Terms such as "mass," "force," "life," or "consciousness" do not refer to empirical entities as in scientific discourse. They are instead treated as structured configurations of differentiation: ways in which difference becomes stabilized, modulated, or recursively articulated.

This approach is not intended to compete with physics, biology, or psychology on explanatory grounds. Instead, it seeks to reveal the underlying ontological operations that make such domains of explanation possible. From the standpoint of differentiation, gravity may be interpreted as the modulation of coherence around a stable node; mass, as the structural inertia of a differentiating pattern. These are not redefinitions, but recontextualizations: they frame what appears within science as expressions of a deeper logic of articulation.

Thus, this text operates in a different register. It does not test hypotheses or derive laws—it maps how conditions of appearance, structure, and coherence arise from the act of differentiation itself.

This treatise is addressed to those working at the intersection of philosophy, cognitive science, and foundational theory—especially those dissatisfied with purely empirical or linguistic accounts of structure. Its method is ontological, not empirical: it proceeds by tracing the internal consistency of how difference becomes structure. For this reason, many sections take the form of direct assertions. These are provisional forms meant to be questioned, modulated, and reframed.

II. Potentiality and Scene

1. The world consists of distinctions brought into being by *acts of differentiation*, rather than of pre-given objects.
2. *Potentiality* is the formless ground from which all differentiation arises. It enables the emergence of all things without assuming any particular form.
3. Differentiation is the condition of appearance. Where no distinction is enacted, presence remains unrealizable.
4. Differentiation grounds the emergence of being, time, and thought. It establishes the initial articulation through which anything becomes thinkable or present.
5. Among all structural forms, differentiation holds primacy. Even unity requires a contrast to be perceived as such.

    Example. When we say "this object is one," we implicitly differentiate it from what it is not—from the rest of the field. Unity arises by differentiation against a background.

6. Every difference exists only in *relation*; it has no essence and no identity apart from contrast.

    Example. The concept "left" exists only relative to "right"; without contrast, it has no meaning.

7. Differences acquire structure when mutually constrained; such constraints form configurations.

    Example. In a triangle, the length of each side is constrained by the others. The difference between them is shaped by mutual relation.

8. A *configuration* is a coherent pattern of differences that holds together as a unit of appearance.

9. *Coherence* is a structural alignment among distinctions that support each other. Stability results from patterns that reinforce rather than interfere.

10. *Articulation* is the process by which individual acts of differentiation are aligned within a coherent configuration.

    Example. In handwriting, individual strokes combine into letters. Articulation aligns separate acts of differentiation into a coherent symbolic unit.

11. A *scene* is a set of distinctions that coexist within a shared ontological frame. No differentiation occurs outside a scene; likewise, no scene exists without active differentiation.

12. A scene contains distinctions, not objects. What appears is a configuration sustained by articulation.

13. What appears stable in a scene is the repeated alignment of distinctions. Stability reflects a pattern of differentiation that recurs within the scene.

    Example. A candle flame appears stable because its differentiations — temperature, shape, luminosity — are continually re-aligned by dynamic processes.

14. There is no identity across scenes; only structurally similar patterns of differentiation that may recur under certain conditions.

15. The world is the totality of differentiated scenes—the actualizations of difference—and the absences they imply.

16. What lies outside differentiation is not absence, but undifferentiated Potentiality. It is neither a thing nor a void, neither something nor nothing.

III. Aspects

1. An *aspect* is a mode of actualizing differentiation. It is the principle of how differences relate, align, or contrast.

2. An aspect governs how differentiation tends toward stability, shaping the field of structural emergence.

3. There is no act of differentiation without some implicit aspect. Even when minimal, each difference appears through an aspect.

4. An aspect may be quantifiable or not; it can be measured, intuited, or merely sustained through differentiation.

5. *Intensity* is the aspect in which the degree of difference between nodes is evaluated. Lower intensity corresponds to closer structural affinity.

6. A node that differentiates another with minimal intensity treats it as structurally proximate; with higher intensity, as structurally distant. This gradient gives rise to relational structure.

   Example. Two musical notes an octave apart are more distinct than two adjacent semitones. The intensity of their difference defines whether they are integrated as variation or contrasted as separate identities.

7. Structure forms when differences are scaled by intensity. Minor distinctions tend to integrate, forming internal articulation; major ones separate, defining boundaries. This scaling orders the field of differentiation.

8. Space, time, color, and tone exemplify aspects: each defines a mode through which differences appear. Rather than belonging to objects, these structures configure the conditions under which distinctions are possible.

   Example. In a melody, pitch and rhythm act as independent aspects. The same sequence of notes can be

> reinterpreted with a different rhythm, projecting the same pitch differences into a new temporal structure.

9. Each scene unfolds under one or more aspects; these structure the coherence of differences and the emergence of configurations.
10. A difference can be *projected* into other aspects. Its form, meaning, or stability may shift depending on the aspectual structure into which it is projected.

    > *Example.* When we say "this event is meaningful," we project the differentiation onto an evaluative aspect — one in which meaning can emerge, be contrasted with meaninglessness, and be sustained. Without that aspect, the difference does not appear.

11. A projection into a new aspect reshapes coherence, generating a new configuration of difference. It restructures the scene and reveals alternate paths of articulation.
12. Aspects arise immanently through the configuration itself. They modulate coherence from within rather than being assigned from outside.

    > *Example.* A ripple in water configures both movement and shape. The aspect of wave propagation arises from the internal structure of the ripple itself.

13. Even absence is aspectually shaped: silence, stasis, and void manifest as structured modes of differentiation, each sustaining a specific tension.

    > *Example.* A pause in speech is a structured articulation of silence, holding tension.

14. A scene is defined through how its differences are aspectually articulated, not through objects or forces.
15. An aspect provides a local grammar rather than a universal rule.

Example. In legal reasoning, "intent" and "effect" operate as distinct aspectual grammars: the same act may be articulated differently depending on which aspect governs the scene.

16. A new aspect emerges when differentiation *differentiates itself*–when the act reflects upon the aspect.

    Example. When a sound is interpreted as a signal, the differentiation shifts: hearing becomes situated within a communicative aspect. The act of differentiation reflects upon the mode of hearing itself, and a new aspect — meaning — emerges.

17. The emergence of a new aspect creates new scenes, enabling differentiation to operate on another level of articulation.
18. Through recursive aspectual projections, scenes may stabilize, bifurcate, or enter higher-order dynamics; this underlies the emergence of complexity and abstraction.

IV. Recursion and Structure

1. *Recursion* occurs when the act of differentiation becomes the content of further differentiation . This shift takes place within a *specific aspect*, enabling the articulation of structural depth.
2. Recursive differentiation gives rise to new aspects. Within these aspects, difference becomes more stable, its articulation more coherent, its persistence more likely.
3. Recursive differentiation generates new aspects and stabilizes differentiating acts. Through this stabilization, nodes emerge as persistent loci of articulation.
4. A *node* is a stable locus of differentiation. It retains the act, not its outcome, and exists only as long as it continues to differentiate.

> *Example.* A standing wave remains in place because the oscillation sustains itself through recurrent modulation — the node exists as rhythm.

5. A node does not possess identity as substance or content. Its persistence is the process of continued reiteration of difference within an aspect.

6. *Node memory* is the sustained ability of a node to re-enact its differentiation across scenes, and under varying aspectual conditions.

> *Example.* A neuron that fires in response to a repeated stimulus over time maintains a differentiated threshold. Its memory is the persistence of a modulation pattern across activations.

7. Persistent differentiation among nodes produces structured relational scenes. When mutual distinctions stabilize, coherence becomes expressible.

> *Example.* In a conversation, stable roles emerge when participants repeatedly differentiate one another through consistent cues — speaker, listener, responder. The interaction forms a scene structured by mutual distinction.

8. A *rhythm of differentiation* forms when a node links successive distinctions through reference to prior acts. This temporal pattern stabilizes coherence across iterations.

9. *Structure* is the sustained pattern of differences between nodes as they differentiate one another. It emerges through relational articulation rather than through any fixed substance or background.

> *Example.* An atom is a structure: it sustains internal differentiation between nucleus and electrons, but functions as a fixed configuration. It does not modulate how distinctions are related beyond itself.

10. Structural *complexity* arises when nodes bring prior differentiations into new relational contexts, forming layered configurations through sustained patterns.

11. A *meta-node* emerges when stable patterns of differentiation among nodes cohere into a higher-order structure. What becomes stable is the relational structure among differentiating operations — a configuration that supports further modulation.

    Example. A regulatory network in a cell integrates multiple signaling pathways. Its function is to coordinate how internal differentiations operate together — a coherence among processes.

12. Such a structure organizes the logic by which nodes differentiate one another. It sustains coherence across scenes by enabling the continuity and coordination of differentiating acts, rather than embedding specific content.

13. It functions as a node by sustaining the relational pattern among distinctions—it holds the structure of differentiation itself as a unity.

14. The meta-node differentiates its elements as acts, not as objects. Since these elements are already differentiations, it operates upon their structure.

15. In doing so, it becomes recursively linked to its own configuration. Differentiating its parts entails a modulation of itself.

    Example. A living cell is a meta-node: it not only contains structures, but regulates how different processes differentiate and interact. It enables sustained modulation of internal differences in response to external changes.

16. Recursive differentiation reorganizes the differentiating process from within. It sustains the scene by establishing temporal conti-

nuity and enabling structural reflexivity.

V. Time and Interaction

1. *Time* aspect does not pre-exist differentiation. It arises when an act of differentiation recursively differentiates itself—when the distinction becomes aware of its own act.
2. Time emerges when differentiation fails to fully reinstantiate itself. The act no longer coincides with itself, and this gap becomes a structure of sequencing.
3. Differentiation produces time aspect when one act displaces another. The interval between them is the spacing that allows distinction to endure.
4. Time is the spacing of differentiation itself—neither a medium nor a measure, but the minimal structural delay that allows distinction to occur. There is no temporal structure where no separation is possible.
5. Differentiation must occur in sequence to be coherent. If all distinctions happened simultaneously, the scene would collapse into undifferentiated indeterminacy.
6. The quantization of time follows directly: if one act is to be distinct from another, a minimal interval must separate them. Without it, differentiation cannot articulate structure.

   > *Example.* In digital audio, two sounds cannot be distinguished unless a minimal temporal gap separates them. Below that interval, they collapse into simultaneity — no articulation of difference is possible.

7. *Motion* is the temporal modulation of a node's differentiable position within a scene. It occurs when successive acts of differentiation reconfigure the node's spatial relations without collapsing

continuity.

8. The "speed of light" defines the highest rhythm of coherent differentiation possible between nodes. Faster propagation disrupts distinction, dissolving the possibility of stable articulation.

9. Differentiation presupposes relationality. No distinction occurs alone; each act requires a node through which it is sustained, and another through which it is modulated.

   Example. To perceive "red" is to differentiate it from other colors — such as green or blue — within a shared perceptual space. The distinction is sustained through contrast and modulated by the context in which colors appear.

10. When a differentiation changes, it alters the conditions by which another node can differentiate. This structural dependency gives rise to modulation—and, in its stabilized form, to *interaction*.

    Example. In protein folding, a change in one amino acid alters how others differentiate around it. The modulation cascades, reshaping the entire structure through local changes.

11. Interaction is the modulation of one node's differentiability by the differentiation of another. Each act reshapes the shared scene's structure of distinction.

    Example. When a charged particle enters an electromagnetic field, the field modulates the particle's path — altering how its position and momentum differentiate over time. Simultaneously, the particle perturbs the field. Their interaction reshapes the structure of distinctions in the shared physical scene.

12. Interaction is the ontological resolution of difference through structural co-dependence. It constitutes the fabric by which scenes

sustain coherence across time.

13. Forces, motion, influence, and communication are projections of this principle—differentiation modulating differentiation—into distinct aspects.

    Example. In physics, two bodies attract; in biology, cells signal; in language, one phrase modulates the interpretation of another. Though the forms differ, each enacts structured modulation across nodes.

14. Physical, biological, and symbolic interactions thus differ in form, but not in principle. Each expresses the same structure through a different scene.

15. *Space* is an aspect of simultaneous differentiations across nodes. What appears spatially extended is the co-presence of distinct acts without immediate succession.

    Example. When two nodes are differentiated within the same scene, one may appear "closer" because its differentiation is more intense relative to the other. The difference in spatial position arises from how the scene configures simultaneous distinctions.

16. Just as time requires a minimal interval between acts, space requires a minimal separability of simultaneous differentiations. Space becomes quantized when the coherence of spatial distinctions requires discrete structuring. Metric properties emerge secondarily, as stabilizations of this coherence.

17. Space and time manifest as projective aspects of a unified scene of differentiation. Sequential differentiation configures temporal order; parallel differentiation configures spatial extension.

18. Therefore, any scene of differentiation is inherently spacetime-like: no projection can be fully synchronous without rhythm, and no rhythm can be fully linear without a differentiated space.

19. The unity of space and time reflects a deeper coherence: temporal spacing and spatial dispersion are orthogonal aspects of the same structural condition—distinctness sustained across and within nodes.

20. What appears as curvature, extension, or contraction of space is a result of the modulation of differentiation rhythms across nodes. Geometry is a projection of structural variance in how distinctions relate.

21. Multidimensionality results from incompatible geometries of differentiation among nodes. When distinctions do not conform to a shared metric—such as Euclidean distance—no single space can accommodate them. Additional dimensions emerge as projections required to preserve coherence across divergent relational structures.

    Example. Three points may lie on a plane under one set of distances, but if a fourth point has fixed distances to them that violate the triangle inequality, it cannot be embedded in the same plane. To preserve all pairwise relations, an additional spatial dimension is required.

22. String-like or higher-dimensional constructs express the codification of misaligned differentiation patterns. They serve as symbolic configurations that stabilize local incoherence through recursive projection, rather than reflecting intrinsic entities.

VI. Mass and Force

1. *Mass* is the structural inertia of differentiation: the degree to which a node retains its differentiation rhythm against modulation. It expresses the stability of a node's differentiation across temporal intervals.

    Example. A heavy object continues in motion despite small perturbations because its internal structure sustains a stable rhythm of differentiation over time. Its mass reflects the resistance to modulation by external nodes.

2. What appears as gravitational attraction is a modulation of surrounding differentiability by a highly stable node. A massive node alters the rhythm of nearby differentiations, curving the local scene.

3. *Momentum* is a relational persistence: a pattern of differentiation that continues modulating a direction of structural change across nodes.

4. *Energy* is the capacity of a structure to modulate differentiation – how readily a pattern can initiate or sustain change within a scene. While mass reflects inertia, energy reflects potential modulation.

   Example. A compressed spring contains energy because its internal differentiation is primed for modulation. The structure can initiate change without reconstructing the full field.

5. Mass, energy, and momentum are measures of coherence: how differentiation sustains or propagates across time and space.

6. A scene is called massive when it sustains a stable rhythm of differentiation across sequential acts. It is called massless when it propagates modulation without retaining a coherent internal rhythm.

7. The classical equivalence of mass and energy reflects this structural basis: a more stable pattern requires more modulation to alter—what we interpret as greater energy.

8. Measurement is an intervention that reconfigures the scene by introducing new differentiations. It transforms structure rather than merely observing it.

> *Example.* Measuring a particle's position causes the wavefunction to collapse. This act introduces a new differentiation into the scene — selecting one spatial configuration among possible ones and reconfiguring the relational structure.

9. *Observable quantities* (position, velocity, spin, etc.) are stable articulations of how differentiation is sustained across scenes. They reflect structured relations between nodes.

10. *Symmetry* is coherence under transformation: a differentiation remains structurally invariant when modulated in a certain way. Symmetries reflect sustained rhythmic compatibility among nodes.

    > *Example.* A crystal lattice remains invariant under translation — its differentiations repeat rhythmically. This invariance expresses symmetry: structural coherence under spatial modulation.

11. Conservation laws emerge when such symmetries are maintained across transformations. They formalize the stability of differentiation within a given scene.

12. Spontaneous *symmetry breaking* occurs when a configuration selects a particular articulation that no longer preserves prior invariances. It marks a shift in how coherence is maintained.

    > *Example.* In ferromagnetism, random spin orientations align below a critical temperature. A specific direction is selected, breaking prior invariance — the structure reorients its coherence.

13. What appears as a ”force” is often the resolution of a local incoherence: the modulation required to sustain a globally coherent structure when local differentiations misalign.

14. Gravity, electromagnetism, and other interactions are structured

regimes of inter-nodal modulation. Each expresses a distinct form of coherence, formalized in physical theory as fields.

15. Gravity and mass are co-expressions of how differentiation structures persist across scenes. Mass reflects the degree of structural stability within a node; gravity expresses how this stability modulates the differentiability of surrounding nodes.

16. The so-called "quantum" reflects that only certain differentiation rhythms remain coherent within a given scene. Discrete states emerge as constraints on stable articulation — they mark the limits within which differentiation can sustain structural coherence.

    Example. Discrete energy levels in an atom arise because only certain rhythmic patterns of differentiation remain stable. The "quantum" is the structural cut-off for coherence.

17. Superposition reflects structural ambiguity: when multiple differentiation rhythms are simultaneously compatible with the current scene.

    Example. An electron in a superposed orbital does not choose a location — it sustains multiple compatible differentiations until coherence collapses into one.

18. Entanglement is a mutual differentiation that cannot be decomposed into isolated nodes. The structure coheres only as a whole; partial views disrupt this coherence.

19. Interference emerges when multiple potential differentiations overlap structurally. The resulting pattern reflects compatibility or conflict among rhythms—not particles, but projections of differentiability.

20. *Planck's constant* marks a threshold below which structural rhythms cannot be stably resolved. It defines the minimal interval of coherent modulation.