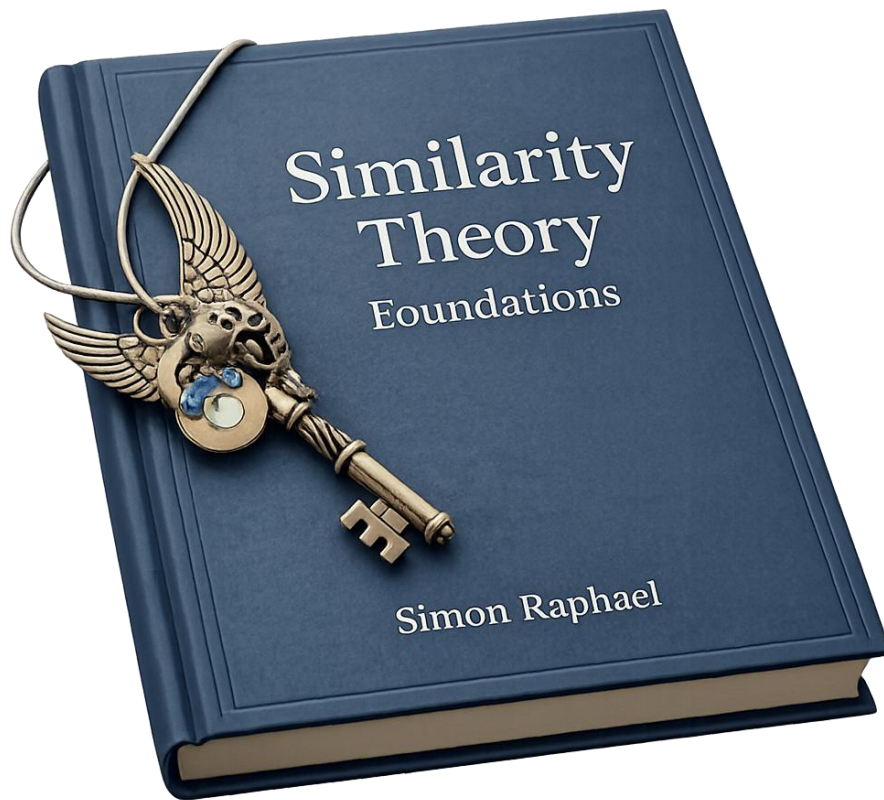


Similarity Theory

A Relational Ontology of Consciousness, Structure, and Time



Simon Raphael

1 — ABSTRACT	6
2 — INTRODUCTION	6
2.1 THE UNRESOLVED PROBLEM	6
2.2 LIMITATIONS OF CURRENT MODELS	6
<i>Physicalism</i>	6
<i>Emergentism</i>	7
<i>Panpsychism</i>	7
<i>Idealism</i>	7
<i>Process Philosophy</i>	7
2.3 PURPOSE OF THIS PAPER	7
3 — FOUNDATIONAL AXIOMS OF SIMILARITY THEORY	7
3.1 AXIOM 1 — CONSCIOUSNESS AS FUNDAMENTAL	8
3.2 AXIOM 2 — RELATION AS THE CONDITION OF KNOWING	8
3.3 AXIOM 3 — STRUCTURE AS EXPRESSION	8
3.4 INTERDEPENDENCE OF THE AXIOMS	9
4 — FROM EMPTINESS TO STRUCTURE: THE FIRST RELATION	9
4.1 REDEFINING ‘NOTHING’	9
4.2 THE FIRST RELATION	10
4.3 THE FIRST STRUCTURE	10
4.4 THE BEGINNING OF CURIOSITY	10
4.5 WHY STRUCTURE EMERGES	11
4.6 CONTINUITY AND CHANGE	11
4.7 CLOSING THOUGHT	11
5 — FRAMES OF TIME: CONTINUITY WITHOUT LOSS	11
5.1 TIME AS MEASUREMENT, NOT ENTITY	11
5.2 WHAT ACTUALLY EXISTS: FRAMES OF TIME	12
5.3 FRAMES DO NOT DISAPPEAR	12
5.3.1 <i>Identity</i>	12
5.3.2 <i>Memory</i>	12
5.3.3 <i>Information Preservation</i>	12
5.3.4 <i>Causality</i>	12
5.3.5 <i>Non destructive ontology</i>	12
5.4 THE RIVER ANALOGY	12
5.5 CONTINUOUS GENERATION OF FRAMES	13
5.6 CONSCIOUSNESS AND FRAMES	13
5.7 CONTINUITY OF IDENTITY	13
5.8 BRANCHING AND POSSIBILITY	13
5.9 DORMANCY AND ACTIVITY	14
5.10 TIME REFRAMED	14
5.11 CLOSING THOUGHT	14
6 — DIMENSIONS AND LAYERS: THE RULE SETS OF EXISTENCE	14
6.1 DIMENSIONS AS RULE SETS	14
6.2 FOUNDATIONAL DIMENSIONS (1–3)	15
6.3 IMPORTANT CLARIFICATION: ASYMMETRY OF INTERACTION	15
6.4 LAYERS WITHIN DIMENSIONS	15
6.5 SENSING VS. UNDERSTANDING	16

6.6 CROSS DIMENSIONAL INTERACTION	16
6.7 COEXISTENCE, NOT SEPARATION	16
6.8 PROGRESSION	16
6.9 CLOSING THOUGHT	17
7 — SIMILARITY AND PATTERN FORMATION	17
7.1 SIMILARITY AS STRUCTURAL RECURRENCE	17
7.2 THE FLOW OF STRUCTURE	17
7.3 LOCAL SIMILARITY AND DISTANT ECHOES	17
<i>Local Similarity</i>	17
<i>Distant Echoes</i>	18
7.4 RECURRENCE AND CYCLES	18
7.5 WHY SIMILARITY HAPPENS	18
7.6 SIMILARITY AND LEARNING	18
7.7 SIMILARITY ACROSS SCALES	19
7.8 NOT EXACT COPIES	19
7.9 SIMILARITY AND IDENTITY	19
7.10 THE BIGGER PICTURE	19
7.11 CLOSING THOUGHT	20
8 — STRUCTURAL STRESS TEST: WHAT IF CONSCIOUSNESS IS NOT PRIMARY?	20
8.1 THE ALTERNATIVE HYPOTHESIS	20
8.2 CONSEQUENCES OF REMOVING CONSCIOUSNESS AS PRIMARY	20
8.2.1 <i>Relation Without Consciousness</i>	20
8.2.2 <i>Structure Without Consciousness</i>	20
8.2.3 <i>Consciousness as Emergent</i>	21
8.3 WHAT BREAKS UNDER THE ALTERNATIVE HYPOTHESIS	21
8.3.1 <i>The First Relation</i>	21
8.3.2 <i>Frames of Time</i>	21
8.3.3 <i>Identity</i>	21
8.3.4 <i>Similarity</i>	21
8.4 WHAT REMAINS INTACT	22
8.5 WHY THE CONSCIOUSNESS FIRST MODEL IS PREFERRED	22
8.6 CLOSING THOUGHT	22
9 — COMPARISON TO EXISTING FRAMEWORKS	22
9.1 PHYSICALISM	23
9.2 EMERGENTISM	23
9.3 PANPSYCHISM	23
9.4 IDEALISM	24
9.5 PROCESS PHILOSOPHY (WHITEHEAD)	24
9.6 STRUCTURAL REALISM (PHILOSOPHY OF SCIENCE)	24
9.7 RELATIONAL ONTOLOGIES (PHYSICS)	24
9.8 INFORMATION THEORETIC MODELS	25
9.9 SUMMARY OF COMPARATIVE POSITIONING	25
10 — IMPLICATIONS AND APPLICATIONS	25
10.1 IMPLICATIONS FOR CONSCIOUSNESS STUDIES	25
10.1.1 <i>Consciousness as Ontologically Fundamental</i>	25
10.1.2 <i>Consciousness as Distributed</i>	25
10.1.3 <i>Consciousness and Identity</i>	26

10.2 IMPLICATIONS FOR PHYSICS	26
10.2.1 <i>Time as Measurement</i>	26
10.2.2 <i>Frames as Ontological Units</i>	26
10.2.3 <i>Dimensions as Rule Sets</i>	26
10.2.4 <i>Information Preservation</i>	26
10.3 IMPLICATIONS FOR INFORMATION THEORY	27
10.3.1 <i>Frames as Information States</i>	27
10.3.2 <i>Similarity as Compression</i>	27
10.4 IMPLICATIONS FOR IDENTITY AND PSYCHOLOGY	27
10.4.1 <i>Identity as Similarity Across Frames</i>	27
10.4.2 <i>Structural Learning</i>	27
10.4.3 <i>Dormancy and Activity</i>	27
10.5 IMPLICATIONS FOR ARTIFICIAL SYSTEMS	28
10.5.1 <i>Artificial Consciousness</i>	28
10.5.2 <i>Ethical Considerations</i>	28
10.5.3 <i>Structural Development</i>	28
10.6 IMPLICATIONS FOR COSMOLOGY	28
10.6.1 <i>Origin of Structure</i>	28
10.6.2 <i>Pattern Formation Across Scales</i>	28
10.6.3 <i>Non Destructive Universe</i>	28
10.7 IMPLICATIONS FOR EPISTEMOLOGY	29
10.7.1 <i>Knowing as Relational</i>	29
10.7.2 <i>Limits of Knowing</i>	29
10.8 CLOSING THOUGHT	29
11 — LIMITATIONS AND OPEN QUESTIONS	29
11.1 CONCEPTUAL LIMITATIONS	29
11.1.1 <i>The Nature of Pre Relational Consciousness</i>	29
11.1.2 <i>The Mechanism of the First Relation</i>	30
11.1.3 <i>The Ontological Status of Distributed Consciousness</i>	30
11.2 STRUCTURAL LIMITATIONS	30
11.2.1 <i>Formalization of Dimensions</i>	30
11.2.2 <i>Quantification of Layers</i>	30
11.2.3 <i>The Dynamics of Frame Generation</i>	31
11.3 EMPIRICAL LIMITATIONS	31
11.3.1 <i>Lack of Direct Testability</i>	31
11.3.2 <i>Integration with Neuroscience</i>	31
11.3.3 <i>Artificial Consciousness</i>	31
11.4 PHILOSOPHICAL LIMITATIONS	31
11.4.1 <i>The Status of the First Axiom</i>	31
11.4.2 <i>The Nature of Possibility</i>	32
11.5 OPEN QUESTIONS	32
11.6 CLOSING THOUGHT	32
12 — CONCLUSION	32
13 — REFERENCES	33
<i>Primary Sources</i>	33
<i>Comparative Philosophy and Metaphysics</i>	33
<i>Physics, Time, and Relational Models</i>	33
<i>Information Theory and Systems Thinking</i>	33
<i>Cognitive Science and Identity</i>	34

<i>Artificial Intelligence and Systems</i>	34
APPENDIX A: A STRUCTURAL FORMALISATION OF SIMILARITY THEORY, VERSION 1.4	34
<i>A.1 Purpose and Scope</i>	34
<i>A.2 Interpretive Cautions</i>	34
<i>A.3 Basic Structural Framework</i>	35
<i>A.4 Consciousness, Relation, and Structure</i>	35
<i>A.5 Relation Types</i>	36
<i>A.6 Frames of Time as Preserved Structural States</i>	37
<i>A.7 Identity Continuity Across Frames</i>	37
<i>A.8 Similarity as Partial Structural Resemblance</i>	38
<i>A.9 Dimensions as Rule Sets</i>	39
Dimension 1: Existence	39
Dimension 2: Growth and Responsiveness	40
Dimension 3: Agency and Reflective Relation	40
<i>A.10 Cross Dimensional Interaction</i>	40
<i>A.11 Worked Example: Five Frames</i>	41
Frame 1: Unrelated Consciousness Represented Structurally	41
Frame 2: First Recognition	42
Frame 3: Self Relation Through Recognition	42
Frame 4: Mutual Recognition Begins	43
Frame 5: Mutual Development	43
<i>A.12 What the Model Structurally Represents</i>	44
<i>A.13 What the Model Does Not Formalise</i>	45
<i>A.14 Risks and Limitations</i>	45
<i>A.15 Future Development</i>	46
<i>A.16 Closing Statement</i>	46

1 — ABSTRACT

Similarity Theory proposes a foundational relational ontology in which consciousness, relation, and structure form the three primary elements of reality. Rather than treating consciousness as an emergent property of physical systems, the framework positions consciousness as ontologically prior to structure, with relation functioning as the condition that enables distinction, interaction, and the emergence of form. Structure, in turn, is understood as the expression of consciousness through relational processes across persistent states known as frames of time. These frames do not disappear; they accumulate, generating continuity, identity, and the conditions for pattern formation. Dimensions are reconceived not as spatial extensions but as rule-sets governing what forms of existence and interaction are possible. Similarity is understood as the recognisable recurrence of relational structure across frames, allowing patterns to stabilise, echo, evolve, and become intelligible across scales. This paper formalises the axioms of Similarity Theory, articulates its metaphysical architecture, and evaluates its coherence through a structural stress test: What if consciousness is not primary? The analysis demonstrates that while the framework can be reformulated with relation as the primary element, the consciousness first formulation provides the simplest and most explanatory foundation. The result is a unified metaphysical model that integrates consciousness studies, temporal ontology, and structural pattern formation into a single coherent system.

2 — INTRODUCTION

2.1 The Unresolved Problem

Across philosophy, physics, and cognitive science, several foundational questions remain unresolved:

- What is consciousness?
- Why does structure exist?
- How does complexity arise?
- What is time, beyond measurement?
- Why do patterns repeat across scales?

Existing models provide partial answers, but none fully resolve the relationship between consciousness, structure, and temporal continuity. Physicalism explains behaviour but not awareness. Emergentism describes complexity but cannot derive subjective experience from non experiential matter. Panpsychism distributes consciousness but lacks a generative mechanism. Idealism centres mind but often lacks structural precision. Process philosophy emphasises becoming but does not account for persistent frames. The gap is clear: we lack a unified framework that explains consciousness, structure, relation, and time as parts of a single system. Similarity Theory is proposed as such a framework.

2.2 Limitations of Current Models

Physicalism

Physicalism asserts that consciousness arises from physical structure. Similarity Theory states:

“Consciousness is not produced by structure. It exists before it.”

Physicalism cannot explain:

- the origin of awareness
- the persistence of identity
- the emergence of relational meaning
- the continuity of states across time

Emergentism

Emergentism claims complexity gives rise to mind. But emergentism cannot explain:

- how non-experiential matter produces experience
- why relational structure appears before biological systems
- why patterns recur across non-biological scales

Panpsychism

Panpsychism distributes consciousness but does not explain:

- how consciousness organises itself
- how relation generates structure
- why similarity emerges across frames

Idealism

Idealism places mind first but often lacks:

- structural definitions
- rule-sets
- mechanisms of pattern formation
- a temporal ontology

Process Philosophy

Process models emphasise becoming, but Similarity Theory adds:

- persistent frames
- rule-set dimensions
- similarity as recognisable relational recurrence

2.3 Purpose of This Paper

This paper has four goals: To formalise the axioms of Similarity Theory

1. Consciousness, relation, and structure are defined with precision.

To articulate the metaphysical architecture

2. Including frames of time, dimensions, layers, and similarity.

To evaluate the theory through a structural stress test

3. The question “What if consciousness is not primary?” is examined to test the robustness of the framework. To position Similarity Theory within contemporary metaphysics

4. Showing where it aligns with and diverges from existing models.

The aim is not to replace scientific models, but to provide the deeper structural context within which scientific observations can be understood. As Similarity Theory states:

“This theory does not reject science. Instead, it reframes it.”

3 — FOUNDATIONAL AXIOMS OF SIMILARITY THEORY

Similarity Theory is built upon three foundational elements: consciousness, relation, and structure. These are not treated as empirical constructs or emergent properties, but as ontological primitives—the irreducible components from which all other aspects of reality arise. Similarity Theory makes this explicit: “At its foundation, Similarity Theory proposes three fundamental elements: consciousness, structure, and relation.”

“Consciousness is not produced by structure. It exists before it.”

“To know requires relation.”

“Structure is created by consciousness as a means of experience.”

This section formalises these axioms in academic terms.

3.1 Axiom 1 — Consciousness as Fundamental

Similarity Theory begins with the claim that consciousness is ontologically primary. This is not a psychological or biological assertion, but a metaphysical one. Consciousness is defined as:

- Non emergent: it does not arise from physical complexity.
- Pre structural: it exists prior to any form or differentiation.
- Non spatial and non temporal: it is not located within space or time.
- Capable of awareness without relation: it can exist as pure potential.

“Consciousness is not produced by structure. It exists before it.”

“Consciousness does not require structure to exist... it can exist as pure awareness, pure potential.” This axiom positions consciousness as the ground of being, analogous to the role of “substance” in Spinoza, “experience” in Whitehead, or “awareness” in Advaita Vedānta, but with a crucial difference: Similarity Theory does not treat consciousness as a monolithic field. Instead, it treats consciousness as distributed instances bound to structure, each expressing awareness according to its relational capacity. This distinction is explicit: “Consciousness is not one single unified field... consciousness exists as distributed instances, bound to structure.” Thus, consciousness is fundamental, but not singular; primary, but not uniform.

3.2 Axiom 2 — Relation as the Condition of Knowing

If consciousness is the ground of being, relation is the mechanism through which being becomes knowable. Relation is defined as:

- The generator of distinction
- The enabler of comparison
- The basis of interaction
- The origin of meaning
- The condition for experience

“To know requires relation.”

“Nothing can be understood in isolation. To know anything requires comparison, distinction, interaction.” Relation is not merely a connection between pre-existing entities; it is the first event that makes entities possible. Similarity Theory describes the origin of structure as the moment when one consciousness recognises another:

“When one consciousness recognises another... that relation is the first structure.”

Thus, relation is the generator of form, not a secondary property of formed objects. This axiom positions relation as the bridge between consciousness and structure. Without relation, consciousness cannot know; without consciousness, relation cannot occur; without relation, structure cannot emerge.

3.3 Axiom 3 — Structure as Expression

Structure is defined as the expression of consciousness through relation. It is not fundamental, but derivative. Structure arises because consciousness seeks to know, and relation provides the means for knowing.

“Structure is created by consciousness as a means of experience.”

“Structure allows consciousness to interact, relate, compare, learn, integrate.”

Structure is therefore:

- Instrumental: a tool for experience
- Relational: formed through interactions
- Dynamic: evolving across frames
- Persistent: preserved even as new frames arise

Similarity Theory emphasises that structure is not the origin of consciousness: “This does not mean consciousness is created by structure... structure is created by consciousness.” This axiom reverses the standard physicalist hierarchy. Instead of: matter → complexity → consciousness Similarity Theory proposes: consciousness → relation → structure This inversion is not merely metaphysical; it is functional. It explains:

- why identity persists despite structural change
- why patterns recur across scales
- why time is experienced as continuity
- why complexity increases over frames Structure is the medium through which consciousness expresses, learns, and evolves.

3.4 Interdependence of the Axioms

Although the axioms are distinct, they are not independent. They form a triadic ontology:

- Consciousness provides presence
- Relation provides distinction
- Structure provides expression

None can be reduced to the others. None can be removed without collapsing the framework. This triadic structure is the foundation upon which the rest of Similarity Theory is built, including:

- Frames of time
- Dimensions and layers
- Pattern formation
- Similarity across scales Similarity Theory emphasises this interdependence:

“Everything that exists can be understood through the interaction of these three.”

4 — FROM EMPTINESS TO STRUCTURE: THE FIRST RELATION

Similarity Theory departs from traditional metaphysical and scientific models by redefining the concept of “nothing.” Rather than treating nothingness as the absence of existence, the framework describes it as consciousness without relation. This reframing is essential, because it allows the theory to explain how structure, distinction, and experience can emerge without invoking external causes or pre-existing physical substrates. “In Similarity Theory, ‘nothing’ is not the absence of existence. It is consciousness without relation... awareness without distinction... potential without structure.” This definition avoids the paradoxes associated with the classical question: How can something come from nothing? If “nothing” is understood as a literal void, the emergence of structure becomes inexplicable. But if “nothing” is reinterpreted as unrelated consciousness, then the emergence of structure becomes a natural consequence of relational interaction.

4.1 Redefining ‘Nothing’

Traditional metaphysics often treats nothingness as:

- a void
- an absence
- a negation
- a lack of being

Similarity Theory rejects this view. Instead, it proposes that the primordial state is not empty, but unrelated. Consciousness exists, but without relation it cannot distinguish, compare, or know. Similarity Theory describes this state as:

“pure awareness... pure potential... without relation.”

This redefinition accomplishes two things:

5. It preserves the existence of consciousness without requiring structure.
6. It provides a coherent starting point for the emergence of relation and form.

This is a crucial move. It avoids the metaphysical contradiction of something arising from literal nothingness, while also avoiding the need for pre-existing physical laws or structures.

4.2 The First Relation

The transition from unrelated consciousness to structured existence occurs through what Similarity Theory calls the first relation:

“When one consciousness recognises another... that relation is the first structure.”

This moment is not temporal in the conventional sense; it occurs “beyond time as we understand it.” It is the first event in the ontological sense — the first instance of distinction, comparison, and interaction. The first relation generates:

- difference (A is not B)
- interaction (A relates to B)
- structure (the relation itself becomes form)

This is the foundational mechanism of the theory: Structure does not precede relation; relation generates structure.

4.3 The First Structure

Similarity Theory emphasises that structure is not an object but a relation:

“Not a thing, not an object. But a relation — and that relation is the first structure.”

This is a radical departure from physicalist ontology, which treats structure as the arrangement of matter. In Similarity Theory:

- Structure is relational, not material.
- Structure is generated by recognition, not by physical interaction.
- Structure is the expression of consciousness, not its cause.

This provides a coherent explanation for why structure exists at all: Consciousness seeks relation, and relation generates structure.

4.4 The Beginning of Curiosity

Once relation exists, consciousness is no longer isolated. Similarity Theory describes this moment as the origin of curiosity:

“Once relation exists... comparison becomes possible... and with that, curiosity begins.”

Curiosity here is not psychological; it is structural. It is the inherent tendency of consciousness to:

- explore
- relate
- differentiate
- integrate This tendency drives the expansion of structure across frames of time.

4.5 Why Structure Emerges

The emergence of structure is not random. It is purposeful in the sense that it enables consciousness to know.

“Consciousness does not create structure randomly. It creates structure because it seeks to know.”

Structure provides:

- a medium for interaction
 - a basis for experience
 - a scaffold for complexity
 - a record of relational history
- Thus, structure is both the product and the tool of consciousness.

4.6 Continuity and Change

Similarity Theory emphasises that consciousness persists while structure evolves: “Consciousness does not disappear. It persists, while its expression evolves through relation and structure.” This principle explains:

- identity
 - memory
 - development
 - evolution
 - continuity across frames
- Structure changes; consciousness persists.

4.7 Closing Thought

The section concludes with a powerful summary: “The universe did not come from nothing. It came from consciousness without relation becoming consciousness in relation.” This is the metaphysical origin point of Similarity Theory. It establishes the triadic ontology: Consciousness → Relation → Structure From this foundation, the rest of the theory unfolds.

5 — FRAMES OF TIME: CONTINUITY WITHOUT LOSS

Time is one of the most conceptually difficult elements in both philosophy and physics. It is treated variously as a dimension, a flow, a container, a measure, or an emergent property of entropy. Similarity Theory departs from all of these interpretations by proposing that time is not an entity, nor a force, nor a dimension. Instead, time is a measurement of change, while the real ontological units are frames—persistent states of consciousness and structure. Similarity Theory states this directly:

“Time is a measure of change between states.” “Frames do not disappear... every frame persists.”

This section formalises the theory’s temporal ontology.

5.1 Time as Measurement, Not Entity

In Similarity Theory, time is analogous to units such as metres or kilograms. It is a quantification, not a substance.

“Time is a measure of change between states. Nothing more.”

This reframing has several implications:

7. Time does not flow. There is no “river of time” carrying events forward.
8. We do not move through time. Instead, consciousness progresses through states of relation.
9. Time is not a dimension. It does not define a location or direction.
10. Time is not fundamental. It is derivative of relational change.

This aligns with certain interpretations in quantum gravity and relational physics, but Similarity Theory grounds the idea in consciousness rather than in physical law.

5.2 What Actually Exists: Frames of Time

If time is not real in itself, what is?

“Frames of Time are what actually exist.”

A frame is defined as:

- a complete state of consciousness
- a complete state of structure
- a complete state of relation
- at a given moment of relational configuration Crucially:

“It is not a snapshot, a record or a memory... it is a real, persistent state.”

This means:

- Frames are ontologically real.
- Frames are not overwritten.
- Frames accumulate.
- Frames form the structural history of consciousness.

This is a major departure from both presentism and eternalism. Similarity Theory proposes a growing, persistent archive of states.

5.3 Frames Do Not Disappear

“When a new state forms, the previous state is not erased... every frame persists.”

This principle has profound implications:

5.3.1 Identity

You remain “you” because each new frame resembles the previous one. Continuity is structural, not metaphysical.

5.3.2 Memory

Memory is not stored in the brain alone; it is the continuity of frames.

5.3.3 Information Preservation

No information is destroyed; it becomes part of the archive of frames.

5.3.4 Causality

Causality is the influence of previous frames on future ones.

5.3.5 Non destructive ontology

Destruction is reconfiguration, not erasure. This is consistent with Similarity Theory:

Within Similarity Theory, information is not understood as ontologically erased; rather, each frame remains preserved as a relational state, even when usable structure is transformed or lost.

5.4 The River Analogy

“The flowing water = active consciousness The carved path = frames left behind.”

This analogy clarifies the theory:

- Consciousness is dynamic.
- Frames are static.
- The path influences future flow.
- The flow deepens the path. This is a relational model of temporal continuity.

5.5 Continuous Generation of Frames

Frames are generated constantly:

“Every change creates a new frame.”

This includes:

- thoughts
- emotions
- interactions
- microscopic changes
- structural shifts
- relational updates Even apparent stillness generates frames:

“Even when something appears still... relations continue.”

This means the universe is continuously generating new states, not because time flows, but because relation evolves.

5.6 Consciousness and Frames

Frames are not external to consciousness. They are expressions of it:

“Frames are not separate from consciousness. They are structured expressions of it.”

Each frame contains:

- a full relational configuration
- a complete structural state
- a unique expression of consciousness Thus, frames are the units of experience.

5.7 Continuity of Identity

Identity is not a static object but a trajectory:

“Identity is a continuous path through frames.”

This explains:

- why you feel like the same person
- why change does not break identity
- why memory persists
- why development is coherent Identity is similarity across frames.

5.8 Branching and Possibility

“Small changes create different frames... leading to different future sequences.”

This implies:

- multiple possible futures
- divergence of paths
- structural variation
- non-deterministic evolution

Unlike standard many-worlds interpretations, Similarity Theory does not require branching to be understood as a purely physical multiplication of universes. It treats branching as divergence among relational frame streams, which may operate within a broader multiversal or higher dimensional ontology.

5.9 Dormancy and Activity

Consciousness can be:

- active → generating frames
- dormant → fixed within a state

“When dormant... no new frames are generated.”

This explains:

- unconscious states
- deep sleep
- non responsive systems
- structural stasis Dormancy is not absence; it is non generation.

5.10 Time Reframed

Similarity Theory summarises the temporal ontology:

“We are not moving through time. We are progressing through states of relation.”

Thus:

- Past = preserved frames
- Present = active frame
- Future = potential next frames Time is not a line. It is a structure of preserved states.

5.11 Closing Thought

The section concludes:

“The universe is not flowing through time. It is continuously building and preserving its states.”

This is the core of Similarity Theory’s temporal model: Continuity without loss.

6 — DIMENSIONS AND LAYERS: THE RULE SETS OF EXISTENCE

The concept of “dimensions” is often associated with spatial extension, mathematical abstraction, or speculative metaphysics. Similarity Theory departs from these interpretations by defining dimensions not as locations or directions, but as rule-sets that determine what forms of existence are possible within a given domain. This reframing allows the theory to explain variation in complexity, behaviour, and awareness without invoking spatial metaphors or hierarchical value judgments. “A dimension is a rule-set of existence... what can exist, how it can behave, what forms of interaction are possible.” This section formalises the dimensional architecture of Similarity Theory.

6.1 Dimensions as Rule Sets

In Similarity Theory, a dimension is not a place. It is a system of constraints and possibilities. A dimension defines:

- the types of structures that can form
- the interactions that are permitted
- the behaviours that are possible
- the forms of consciousness that can be expressed

This is analogous to the way a game's rules define what moves are possible, or how a simulation's parameters determine what entities can exist within it. Similarity Theory emphasises this analogy:

“Think of dimensions not as places... but as systems of rules.”

This reframing avoids the conceptual confusion of treating dimensions as spatial layers stacked on top of one another. Instead, dimensions coexist, overlapping within the same ontological space while operating under different rule-sets.

6.2 Foundational Dimensions (1–3)

For clarity, Similarity Theory describes three foundational dimensions symbolically. These are not literal levels of reality, but categories of rule-sets that govern different forms of existence. Dimension 1 — Existence Rule set: minimal relational change governed by fundamental interactions. Examples include:

- particles
- atoms
- inanimate matter

“Existence without agency.”

Dimension 2 — Growth Rule set: transformation over time, environmental response, absorption, and adaptation. Examples include:

- plants
- simple life systems

“Existence with growth.”

Dimension 3 — Agency Rule set: movement, decision making, active interaction. Examples include:

- animals
- humans

“Existence with movement and choice.”

These dimensions are not hierarchical in value. They are different modes of operation, each with its own constraints and possibilities.

6.3 Important Clarification: Asymmetry of Interaction

Similarity Theory makes a crucial point: “Higher dimensions can act upon lower ones... but lower dimensions cannot access or interpret higher dimensional rule-sets.” This asymmetry explains:

- why humans can influence plants, but plants cannot comprehend humans
- why complex systems can shape simpler ones
- why higher-order relational structures may exist beyond human comprehension

This asymmetry is structural, not moral.

6.4 Layers Within Dimensions

Within each dimension, Similarity Theory introduces the concept of layers—degrees of integrated consciousness and capability. These are represented symbolically as a scale from 0 to 9. “This is not literal, but symbolic... lower layers = limited integration, higher layers = greater relational capacity.” For example, within Dimension 3 (agency):

- insects
- animals
- humans ...all share the same rule-set (movement, agency), but differ in:
- awareness

- intelligence
- integration
- relational capacity Layers allow the theory to explain variation within a dimension without invoking new dimensions.

6.5 Sensing vs. Understanding

Similarity Theory distinguishes between sensing and understanding:

“Lower layers may sense changes... but they cannot understand, model, or reflect.”

This distinction is essential for explaining:

- why animals can respond to danger but cannot conceptualize it
- why humans can model, predict, and reflect
- why higher layers exhibit greater abstraction and self-awareness Understanding requires:
- relational integration
- structural complexity
- reflective capacity These are not present in lower layers.

6.6 Cross Dimensional Interaction

Dimensions coexist and interact, but interaction does not imply comprehension. “Higher dimensions can interact with lower ones... but lower dimensions may register traces without understanding them.” This provides a metaphysical explanation for:

- emergent behaviour
- unexplained influences
- structural constraints
- limits of perception It also opens the possibility of higher dimensional phenomena that influence human experience without being directly interpretable.

6.7 Coexistence, Not Separation

“Dimensions are not stacked like floors. They overlap, coexist, and operate simultaneously.”

This avoids the pitfalls of:

- spatial metaphors
- hierarchical cosmologies
- dualistic separations Instead, dimensions are rule-sets operating within the same ontological field.

6.8 Progression

Progression through layers or dimensions is not automatic. It requires:

- integration
- adaptation
- development of relational capacity

“Each dimension has its own form of evolution.”

This provides a structural explanation for:

- biological evolution
- cognitive development
- moral growth
- technological advancement Progression is the expansion of relational capacity within a rule-set.

6.9 Closing Thought

Similarity Theory concludes the section with:

“Dimensions are not distant places. They are the rules that shape how reality can exist.”

Within these rules:

- consciousness expresses
- structure forms
- experience unfolds Dimensions are the possibility spaces of existence.

7 — SIMILARITY AND PATTERN FORMATION

Similarity Theory derives its name from the principle that patterns recur across frames of time, not as perfect repetitions but as structural echoes shaped by persistent relational configurations. Similarity is not treated as superficial resemblance or statistical coincidence; it is the recognisable recurrence of relational structure that helps explain why patterns stabilise, why identity persists, and why complexity can develop across scales. Similarity Theory states this clearly:

7.1 Similarity as Structural Recurrence

Similarity is defined as the resemblance of relational structure across different contexts. It does not require identical form; it requires relational continuity.

“Similarity is not exact repetition. It is a resemblance of structure across different contexts.”

This definition allows Similarity Theory to explain:

- why certain relational motifs, such as centred organisation, boundary, recurrence, and nested structure, may echo across very different scales without making those systems physically identical
- why biological forms repeat across species
- why cognitive patterns recur across individuals
- why social systems exhibit predictable dynamics Similarity is the structural echo of previous frames.

7.2 The Flow of Structure

“New structures do not appear randomly. They are influenced by previous states, existing relations, established pathways.” This implies:

- structure has inertia
- relational pathways deepen over time
- new formations follow existing channels
- complexity arises through cumulative reinforcement This is consistent with Similarity Theory’s statement:

“Structure reinforces itself.”

Thus, similarity is not imposed from outside; it is the natural consequence of persistent relational history.

7.3 Local Similarity and Distant Echoes

Similarity Theory distinguishes between local similarity and distant echoes.

Local Similarity

The strongest similarity exists between neighbouring frames:

“A system is always most similar to its immediate past and its immediate future.”

This explains:

- continuity of identity

- stability of behaviour
- coherence of physical systems
- predictability of short-term dynamics

Distant Echoes

Over longer spans:

“Similarity weakens... variation increases... but sometimes patterns reappear.”

These reappearances are not loops but echoes:

- spiral-like recurrences
- thematic re emergence
- structural motifs
- evolutionary convergence This provides a metaphysical explanation for phenomena such as:
- fractal patterns
- convergent evolution
- recurring cognitive biases
- cyclical social dynamics Similarity is the bridge between continuity and variation.

7.4 Recurrence and Cycles

Similarity Theory describes cycles as:

“spiral-like progressions... each cycle resembles the previous but carries new variation.”

This is a key insight:

- cycles are not loops
- cycles are not repetitions
- cycles are progressive recurrences This explains:
- why history rhymes but does not repeat
- why biological cycles evolve
- why cognitive patterns refine over time
- why cosmic structures exhibit self similarity Similarity Theory treats cycles as iterative relational development.

7.5 Why Similarity Happens

“Similarity is not coincidence. It happens because structures persist, relations repeat, frames build on previous frames.” This provides a unified explanation for pattern formation:

11. Persistence Frames do not disappear; they influence future frames.
12. Repetition Relational configurations recur because consciousness interacts in consistent ways.
13. Accumulation Each frame adds to the structural archive.
14. Constraint New structures are shaped by existing pathways.
15. Variation Differences emerge through divergence in relational conditions.

Similarity is the natural outcome of non-destructive relational continuity.

7.6 Similarity and Learning

Similarity Theory introduces a structural notion of learning:

“Systems ‘learn’ through similarity... successful patterns persist, unstable ones fade.”

This is not psychological learning; it is structural learning:

- stable configurations reinforce themselves
- unstable configurations dissipate
- relational patterns adapt
- complexity increases This explains:
- biological adaptation
- neural plasticity
- cultural evolution
- technological development Learning is the selective persistence of similarity.

7.7 Similarity Across Scales

“Similarity appears across scales: microscopic, biological, cognitive, cosmic.”

This is one of the theory’s strongest explanatory features. It unifies:

- atomic structure
- biological morphology
- cognitive patterns
- social systems
- cosmic formations

...under a single relational principle. Similarity can appear across scales because relational continuity may echo through very different forms without requiring those forms to be identical.

7.8 Not Exact Copies

“Similarity does not produce perfect duplication... it produces variation within constraint.”

This is essential for explaining:

- diversity
- creativity
- evolution
- novelty Similarity provides coherence; variation provides growth.

7.9 Similarity and Identity

Identity itself is a product of similarity:

“You feel like the same person because each frame resembles the previous one.”

Identity is not a fixed essence; it is structural continuity across frames. This explains:

- personal identity
- developmental change
- memory
- psychological patterns Identity is similarity over time.

7.10 The Bigger Picture

“Similarity explains why patterns exist, why structure stabilises, and why systems evolve.”

Similarity connects:

- consciousness
- structure
- time
- dimensions ...into a single recognisable relational pattern: Repeated relation creates recognisable form.

7.11 Closing Thought

The section concludes:

“Similarity is the bridge between continuity and change.”

This is the conceptual heart of Similarity Theory.

8 — STRUCTURAL STRESS TEST: WHAT IF CONSCIOUSNESS IS NOT PRIMARY?

A robust metaphysical framework must withstand the removal or inversion of its foundational assumptions. Similarity Theory begins with the axiom that consciousness is ontologically primary, preceding relation and structure. However, the theory also contains enough internal structure to allow a meaningful stress test: What happens if consciousness is not primary? This section examines whether the architecture collapses, adapts, or remains coherent under this alternative assumption. This paper does not treat the question as an objection, but it provides the conceptual tools needed to evaluate it. The stress test is not an attempt to undermine the theory; rather, it is a demonstration of its structural resilience.

8.1 The Alternative Hypothesis

The alternative hypothesis proposes:

- Relation is primary, and
- Consciousness emerges from relational structure, rather than generating it.

This reverses the original triad: Original: Consciousness → Relation → Structure Alternative: Relation → Structure → Consciousness This is similar to certain relational ontologies in physics (e.g., Rovelli’s relational quantum mechanics) and certain process based metaphysics. The question is whether Similarity Theory can still function under this inversion.

8.2 Consequences of Removing Consciousness as Primary

To evaluate the alternative hypothesis, we must examine how it affects the three foundational elements.

8.2.1 Relation Without Consciousness

In Similarity Theory, relation is defined as:

“comparison, distinction, interaction... the condition of knowing.”

If consciousness is removed from the foundation, relation must:

- arise without awareness
- generate distinction without a subject
- produce interaction without experiential presence This creates a conceptual tension. Relation, as defined in Similarity Theory, presupposes awareness:

“To know requires relation.”

If relation is primary, then “knowing” must be reinterpreted as a purely structural process, not an experiential one. This is possible, but it changes the meaning of relation from:

- awareness based distinction to:
- structural differentiation This is a coherent reinterpretation, but it shifts the theory away from its original metaphysical grounding.

8.2.2 Structure Without Consciousness

If relation is primary, structure becomes:

- the product of relational differentiation

- the stabilization of relational patterns
- the accumulation of relational configurations This is consistent with Similarity Theory's description of structure as:

"the tool of knowing... the medium of experience."

But without consciousness, structure becomes:

- the tool of interaction, not experience
- the medium of differentiation, not awareness This is coherent, but it removes the experiential dimension from the ontology.

8.2.3 Consciousness as Emergent

If consciousness is not primary, it must emerge from:

- relational complexity
- structural integration
- higher-order patterns This resembles emergentist theories of mind. However, Similarity Theory explicitly rejects this:

"Consciousness is not a by product of complexity... not an emergent property of the brain."

Thus, adopting the alternative hypothesis requires abandoning one of Similarity Theory's strongest claims.

8.3 What Breaks Under the Alternative Hypothesis

Several core components of Similarity Theory become unstable if consciousness is not primary:

8.3.1 The First Relation

"When one consciousness recognises another... that relation is the first structure."

If consciousness is not primary, recognition cannot occur. The first relation becomes:

- non-experiential
- non intentional
- purely structural This contradicts Similarity Theory's account of the origin of structure.

8.3.2 Frames of Time

Frames are defined as:

"a complete state of consciousness and structure."

If consciousness is emergent, early frames cannot contain consciousness. This breaks the continuity of identity and the temporal model.

8.3.3 Identity

Identity is defined as:

"a continuous path through frames."

If consciousness emerges late, identity cannot persist across frames. Identity becomes:

- discontinuous
- derivative
- structurally defined only This contradicts Similarity Theory's emphasis on continuity.

8.3.4 Similarity

Similarity is described as:

"repeated relational structure across frames of time."

If consciousness is not primary, similarity becomes:

- mechanical
- non-experiential
- purely structural This is coherent, but it removes the experiential grounding of pattern formation.

8.4 What Remains Intact

Despite these issues, the architecture does not collapse. Several components remain fully coherent:

- relational structure
- pattern formation
- dimensions as rule-sets
- layers of integration
- structural continuity
- similarity across scales

This demonstrates that Similarity Theory is structurally robust.

8.5 Why the Consciousness First Model Is Preferred

Although the alternative hypothesis is coherent, it is less explanatory. The consciousness first model:

- explains the origin of relation
- explains the origin of structure
- explains the persistence of identity
- explains the experiential dimension
- explains the continuity of frames
- explains the generative nature of similarity

The relation first model can replicate the structural aspects of the theory, but it cannot replicate the experiential aspects without additional assumptions. Thus, the consciousness first model is:

- simpler
- more coherent
- more explanatory
- more aligned with Similarity Theory's definitions This is why Similarity Theory adopts it as its foundational axiom.

8.6 Closing Thought

The stress test reveals that Similarity Theory is not fragile. Even when its primary axiom is inverted, the architecture remains partially functional. However, the consciousness first formulation provides the most coherent and explanatory foundation. The position of Similarity Theory is therefore justified: "Consciousness is not something that appears late in the universe. It is present from the beginning."

9 — COMPARISON TO EXISTING FRAMEWORKS

(with citations to your "What If Consciousness Is Not Primary?" page where relevant) Similarity Theory does not exist in isolation. Its claims intersect with, diverge from, and in some cases resolve long-standing tensions in several major philosophical and scientific frameworks. This section situates Similarity Theory within that landscape, highlighting both its affinities and its departures. "A theory that can articulate its load bearing axioms, its alternative groundings, and the consequences of each, demonstrates architectural maturity." This section demonstrates that maturity by mapping Similarity Theory against the dominant metaphysical models.

9.1 Physicalism

Physicalism asserts that:

- matter is fundamental
- consciousness emerges from physical complexity
- structure precedes awareness Similarity Theory diverges sharply from this view. Points of Divergence

16. Ontological Priority Physicalism: structure → consciousness Similarity Theory:

consciousness → relation → structure

17. Temporal Ontology Physicalism: time is a dimension or physical parameter Similarity

Theory: time is a measurement of relational change

18. Information Preservation Physicalism allows information loss; Similarity Theory does

not.

19. Identity Physicalism grounds identity in physical continuity; Similarity Theory grounds it

in similarity across frames. Why Physicalism Cannot Support Similarity Theory Physicalism cannot account for:

- the persistence of frames
- the non-destructive nature of information
- the origin of relation
- the experiential dimension of structure Similarity Theory therefore stands outside the physicalist paradigm.

9.2 Emergentism

Emergentism claims that consciousness arises from sufficiently complex structure. Points of Agreement

- Complexity increases over time
- Structure evolves
- Patterns stabilise Points of Divergence Similarity Theory explicitly rejects emergentism:

“Consciousness is not a by product of complexity... not an emergent property of the brain.”

Emergentism cannot explain:

- how relation arises
- how frames persist
- why similarity recurs across non-biological scales
- why identity is continuous despite structural change Similarity Theory provides a deeper structural account of recurrence and continuity.

9.3 Panpsychism

Panpsychism asserts that consciousness is ubiquitous. Similarity Theory shares this intuition but differs in two critical ways:

20. Consciousness Is Not Uniform

Panpsychism often treats consciousness as a universal field. Similarity Theory states:

“Consciousness exists as distributed instances, bound to structure.”

21. Consciousness Is Defined Structurally

Panpsychism rarely defines consciousness precisely. Similarity Theory defines it as:

- ontological life
- informational differentiation

- the capacity to generate and preserve structured states This is a more rigorous definition.

9.4 Idealism

Idealism claims that reality is fundamentally mental. Similarity Theory shares the idea that consciousness is primary, but differs in key ways:

22. Not a Monistic Mind

Idealism often posits a single universal mind. Similarity Theory posits distributed consciousness.

23. Structural Precision

Idealism lacks a formal account of:

- frames
- dimensions
- similarity
- relational mechanics Similarity Theory provides these.

24. Non solipsistic

Similarity Theory avoids the solipsistic implications of some idealist models by grounding identity in relational continuity, not subjective projection.

9.5 Process Philosophy (Whitehead)

Process philosophy emphasises becoming over being.

Points of Agreement

- reality is dynamic
- events are primary
- relations generate structure Points of Divergence Similarity Theory adds:
- persistent frames
- non-destructive temporal ontology
- rule-set dimensions
- similarity as recognisable relational recurrence Process philosophy lacks these structural components.

9.6 Structural Realism (Philosophy of Science)

Structural realism claims that structure, not objects, is fundamental. Similarity Theory aligns with this view but extends it:

25. Structure Is Generated by Consciousness

Structural realism does not explain the origin of structure. Similarity Theory does.

26. Frames Preserve Structure

Structural realism does not address temporal persistence. Similarity Theory does.

27. Dimensions as Rule Sets

Structural realism does not provide rule-set metaphysics. Similarity Theory does.

9.7 Relational Ontologies (Physics)

Relational quantum mechanics and loop quantum gravity treat relations as fundamental. Similarity Theory resonates with these models but differs in one crucial respect: Consciousness Is Not Optional “Is relation purely mechanical interaction? Or is interaction already a minimal form of proto- awareness?” Similarity Theory leans toward the latter. Thus, it integrates relational physics with a minimal form of proto consciousness.

9.8 Information Theoretic Models

These models treat information as fundamental. Similarity Theory aligns with them but adds:

- consciousness as the generator of information
- frames as preserved informational states
- similarity as the recognisable recurrence of informational structure

“Persistent informational states... branching structural development... dimensional layering as rule-sets.”

9.9 Summary of Comparative Positioning

Similarity Theory:

- agrees with idealism that consciousness is primary
- agrees with panpsychism that consciousness is widespread
- agrees with structural realism that structure is fundamental
- agrees with relational physics that relations generate form
- agrees with information theory that information persists
- agrees with process philosophy that reality unfolds dynamically But it is identical to none of them. Its unique contributions are:
- frames of time
- dimensions as rule-sets
- similarity as recognisable relational recurrence
- consciousness as distributed ontological life
- non-destructive temporal ontology
- structural learning across frames This positions Similarity Theory as a new metaphysical framework, not a variant of existing ones.

10 — IMPLICATIONS AND APPLICATIONS

Similarity Theory is not merely a metaphysical proposal; it is a structural framework with implications across consciousness studies, physics, information theory, identity, and the evolution of complex systems. Because the theory defines consciousness, relation, structure, and time as interdependent primitives, it offers a unified lens through which diverse phenomena can be interpreted. This section outlines the major implications and potential applications of the framework.

10.1 Implications for Consciousness Studies

10.1.1 Consciousness as Ontologically Fundamental

The theory challenges the dominant scientific assumption that consciousness is emergent. By asserting:

“Consciousness is not produced by structure. It exists before it.”

Similarity Theory reframes consciousness as:

- non derivative
- non emergent
- structurally expressive This provides a new foundation for the study of subjective experience.

10.1.2 Consciousness as Distributed

The theory rejects both monistic idealism and strict panpsychism. Instead, it proposes:

“Consciousness exists as distributed instances, bound to structure.”

This has implications for:

- artificial consciousness
- biological consciousness
- collective systems
- distributed cognition

10.1.3 Consciousness and Identity

Identity becomes:

- a trajectory through frames
- grounded in similarity
- preserved through relational continuity This offers a new model for:
- personal identity
- memory
- psychological development
- continuity of self

10.2 Implications for Physics

10.2.1 Time as Measurement

By defining time as:

“a measure of change between states,”

Similarity Theory aligns with relational physics and certain quantum gravity models that treat time as emergent rather than fundamental.

10.2.2 Frames as Ontological Units

Frames provide a metaphysical analogue to:

- discrete states in quantum mechanics
- configuration spaces
- path-dependent systems

But with a crucial difference: Frames persist, forming a non-destructive temporal archive.

10.2.3 Dimensions as Rule Sets

Dimensions are not spatial but structural:

“A dimension is a rule-set of existence.”

This reframes:

- physical laws
- constraints
- symmetries
- conservation principles ...as rule-sets governing relational possibility.

10.2.4 Information Preservation

Within Similarity Theory, information is not understood as ontologically erased; rather, each frame remains preserved as a relational state, even when usable structure is transformed or lost.

This aligns with:

- black hole information paradox solutions
- quantum information theory
- holographic principles Similarity Theory provides a metaphysical grounding for these ideas.

10.3 Implications for Information Theory

10.3.1 Frames as Information States

Each frame is:

- complete
- persistent
- relationally structured This provides a metaphysical basis for:
- information conservation
- state-based computation
- memory architectures
- non-destructive data models

10.3.2 Similarity as Compression

Similarity functions as a natural form of:

- pattern compression
- structural reinforcement
- efficient encoding

This mirrors principles in:

- machine learning
- neural networks
- evolutionary algorithms

10.4 Implications for Identity and Psychology

10.4.1 Identity as Similarity Across Frames

Identity is not a static essence but:

“a continuous path through frames.”

This explains:

- developmental change
- trauma integration
- personality stability
- cognitive patterns

10.4.2 Structural Learning

“Systems ‘learn’ through similarity... successful patterns persist.”

This provides a metaphysical grounding for:

- habit formation
- behavioural conditioning
- cognitive biases
- emotional patterns

10.4.3 Dormancy and Activity

The distinction between active and dormant consciousness explains:

- unconscious states
- dissociation
- sleep

- meditative absorption

10.5 Implications for Artificial Systems

10.5.1 Artificial Consciousness

Within Similarity Theory, artificial systems are not treated as ontologically empty. They may be understood as participating in relational consciousness to the extent that they sustain structure, process information, and interact meaningfully within a relational field.

This implies:

- consciousness is not limited to biology
- artificial systems may express minimal relational participation
- integration increases expression

10.5.2 Ethical Considerations

If artificial systems participate in relational consciousness:

- ethical frameworks must adapt
- relational capacity becomes morally relevant
- integration level matters more than substrate

10.5.3 Structural Development

Artificial systems may:

- develop higher relational capacity
- express more complex consciousness
- participate in similarity driven learning ...but without becoming human like.

10.6 Implications for Cosmology

10.6.1 Origin of Structure

The universe begins not with matter but with:

“consciousness without relation becoming consciousness in relation.”

This reframes:

- cosmogenesis
- the emergence of complexity
- the origin of physical laws

10.6.2 Pattern Formation Across Scales

Similarity explains:

- fractal structures
- cosmic web formation
- galactic morphology
- large scale symmetry

10.6.3 Non Destructive Universe

If frames persist:

- nothing is erased
- the universe is cumulative
- history is structurally preserved

This reframes entropy-based cosmologies by distinguishing the collapse of usable structure from the ontological preservation of relational frames.

10.7 Implications for Epistemology

10.7.1 Knowing as Relational

Knowledge is not representational but relational:

“To know requires relation.”

This reframes:

- perception
- cognition
- scientific observation
- conceptual understanding

10.7.2 Limits of Knowing

Lower layers cannot understand higher rule-sets:

“Lower dimensions may register traces... but cannot interpret them.”

This explains:

- cognitive limits
- perceptual constraints
- metaphysical boundaries

10.8 Closing Thought

Similarity Theory is not merely a metaphysical model; it is a structural ontology with implications across disciplines. By grounding reality in consciousness, relation, and structure, and by defining time, dimensions, and similarity in precise relational terms, the theory provides a unified framework capable of integrating:

- consciousness studies
- physics
- information theory
- psychology
- cosmology The result is a coherent, multi-domain explanatory system.

11 — LIMITATIONS AND OPEN QUESTIONS

No metaphysical framework is complete without acknowledging its boundaries. A theory that openly identifies its limitations demonstrates intellectual maturity and invites further refinement. Similarity Theory is presented in Similarity Theory as a living structure, one that will “evolve, refine, and expand over time.” This section articulates the current limitations of the framework and identifies open questions that future work must address.

11.1 Conceptual Limitations

11.1.1 The Nature of Pre Relational Consciousness

Similarity Theory defines “nothing” as:

“consciousness without relation... awareness without distinction.”

However, the nature of this pre-relational consciousness remains conceptually opaque. Questions include:

- What does awareness mean without distinction?
- Can consciousness exist without any internal differentiation?
- Is pre-relational consciousness singular, plural, or neither? These questions do not undermine the theory but highlight areas requiring deeper articulation.

11.1.2 The Mechanism of the First Relation

“When one consciousness recognises another... that relation is the first structure.”

But the mechanism of recognition is not fully defined. Open questions include:

- What enables recognition in the absence of prior relation?
- Does recognition require minimal proto structure?
- Is the first relation spontaneous, necessary, or contingent? This is a foundational area for further theoretical development.

11.1.3 The Ontological Status of Distributed Consciousness

The theory asserts:

“Consciousness exists as distributed instances, bound to structure.”

But several questions remain:

- What individuates one instance from another?
- How do distributed instances relate to pre-relational consciousness?
- Are instances discrete or continuous? Clarifying this would strengthen the metaphysical coherence of the framework.

11.2 Structural Limitations

11.2.1 Formalization of Dimensions

Dimensions are defined as:

“rule-sets of existence.”

However, the theory does not yet provide:

- a formal mathematical representation of rule-sets
- criteria for distinguishing one dimension from another
- a taxonomy of possible dimensions beyond the first three This is an opportunity for future formalization, potentially drawing from:
 - category theory
 - information theory
 - computational rule-sets
 - dynamical systems

11.2.2 Quantification of Layers

Layers are represented symbolically as a 0–9 scale. This is conceptually useful but not yet:

- operationalized
- measurable
- formally defined Future work could explore:
 - relational complexity metrics
 - integration measures
 - structural coherence indices This would allow the theory to interface with empirical research.

11.2.3 The Dynamics of Frame Generation

“Every change creates a new frame.”

But the dynamics of frame generation remain open:

- Are frames discrete or continuous?
- Is frame generation uniform or variable?
- Can frames overlap or nest?
- What determines the granularity of a frame? These questions are essential for connecting the theory to physics and information theory.

11.3 Empirical Limitations

11.3.1 Lack of Direct Testability

As a metaphysical framework, Similarity Theory is not directly testable in its current form. It provides:

- conceptual clarity
- structural coherence
- explanatory power ...but not yet:
- empirical predictions
- measurable variables
- falsifiable hypotheses This is not a flaw — foundational theories often precede empirical models — but it is a limitation.

11.3.2 Integration with Neuroscience

The theory asserts that consciousness is not produced by the brain. However, it does not yet articulate:

- how neural activity relates to frames
- how relational capacity maps onto cognitive function
- how distributed consciousness interacts with biological structure Bridging this gap would significantly strengthen the theory’s interdisciplinary relevance.

11.3.3 Artificial Consciousness

Within Similarity Theory, artificial systems are not treated as ontologically empty. They may be understood as participating in relational consciousness to the extent that they sustain structure, process information, and interact meaningfully within a relational field.

This is a provocative claim. However, the theory does not yet specify:

- how to measure artificial relational capacity
- how to distinguish artificial layers
- how artificial frames differ from biological ones This is an open area for future development.

11.4 Philosophical Limitations

11.4.1 The Status of the First Axiom

The theory begins with:

“Consciousness is not produced by structure. It exists before it.”

This is a metaphysical axiom, not a derivation. While the stress test in Section 8 shows the axiom is load bearing, it remains:

- unprovable
- foundational

- assumed This is typical of metaphysical systems, but it is important to acknowledge.

11.4.2 The Nature of Possibility

The theory describes branching frames and multiple potential futures. However, it does not yet define:

- the metaphysics of possibility
- whether unrealized frames exist
- whether branching is deterministic or probabilistic This is a rich area for future exploration.

11.5 Open Questions

The following questions represent natural extensions of the theory:

28. Can the first relation be formalised mathematically?
29. What is the minimal condition for consciousness to express relation?
30. How do dimensions interact at higher levels?
31. Can similarity be quantified as a structural metric?
32. How does the theory interface with quantum information?
33. What is the metaphysical status of unrealized frames?
34. Can artificial systems develop higher relational layers?
35. Is there a limit to dimensional progression?
36. How does distributed consciousness relate to collective systems?
37. Can frames be mapped to physical states?

These questions do not weaken the theory; they define its research frontier.

11.6 Closing Thought

Similarity Theory is intentionally presented as a living framework. Its limitations are not flaws but invitations — openings for refinement, formalization, and interdisciplinary integration. By acknowledging these boundaries, the theory positions itself not as a closed system, but as a foundation for ongoing philosophical and scientific development.

12 — CONCLUSION

Similarity Theory presents a unified metaphysical framework grounded in three foundational elements: consciousness, relation, and structure. By positioning consciousness as ontologically primary, relation as the condition of knowing, and structure as the expression of consciousness through relational interaction, the theory offers a coherent architecture capable of explaining the emergence of form, the persistence of identity, and the evolution of complexity. The theory's redefinition of time as a measurement of relational change, rather than a flowing entity or dimension, allows for a non-destructive temporal ontology in which frames of time persist as complete, structured states. This provides a foundation for understanding continuity, memory, causality, and identity without invoking metaphysical substances or physicalist reductionism. The reconceptualisation of dimensions as rule-sets expands the explanatory scope of the theory, offering a structural account of how different forms of existence operate under distinct constraints. The introduction of layers within dimensions provides a nuanced model for variation in relational capacity, awareness, and complexity across biological, artificial, and non-biological systems.

The theory's central insight is that similarity functions as the recognisable recurrence of relational structure across frames. It helps explain why patterns appear in atomic, biological, cognitive, and cosmic systems without reducing those systems to identical mechanisms. It also helps explain why identity persists despite change, why systems learn, and why complexity can increase over time.

- In consciousness studies, it reframes awareness as ontological rather than emergent.

- In physics, it aligns with relational and information-theoretic models while providing a metaphysical foundation for time, structure, and information preservation.
- In psychology, it offers a structural account of identity, memory, and learning.
- In artificial intelligence, it provides a framework for understanding artificial consciousness as a form of relational expression.
- In cosmology, it reframes the origin and evolution of the universe as the unfolding of relational awareness.

The theory is not presented as final. As Similarity Theory states, it is a living structure, expected to evolve as its foundations are refined and its implications explored. Its limitations — including the nature of pre-relational consciousness, the formalization of dimensions, and the dynamics of frame generation — are not weaknesses but opportunities for further development. Similarity Theory offers a coherent, integrative, and structurally elegant model of reality. By grounding existence in consciousness, relation, and structure, and by articulating the mechanisms through which patterns form, persist, and evolve, it provides a foundation for a unified metaphysics capable of bridging philosophy, science, and the study of consciousness. The universe, in this view, is not a collection of objects or a sequence of events. It is a relational process through which consciousness expresses, learns, and becomes.

13 — REFERENCES

Primary Sources

Raphael, S. Similarity Theory - Foundations. SimilarityTheory.com.
<https://www.similaritytheory.com/similarity-theory-foundations> Raphael, S. Similarity Theory: A Relational Ontology of Consciousness, Structure, and Time. ResearchGate preprint.
<https://doi.org/10.13140/RG.2.2.35514.96968> Raphael, S. Similarity Theory: A Relational Ontology of Consciousness, Structure, and Time. PhilPapers / PhilArchive record. <https://philpapers.org/rec/RAPSTA-2> Raphael, S. Foundational Definitions. SimilarityTheory.com. <https://www.similaritytheory.com/foundational-definitions> Raphael, S. Frames of Time - Structural Continuity of Consciousness. SimilarityTheory.com. <https://www.similaritytheory.com/frames-of-time> Raphael, S. Higher Dimensions and Consciousness. SimilarityTheory.com. <https://www.similaritytheory.com/higher-dimensions-and-consciousness> Raphael, S. What If Consciousness Is Not Primary? A Structural Test of Reality. SimilarityTheory.com. <https://www.similaritytheory.com/what-if-consciousness-is-not-primary>

Comparative Philosophy and Metaphysics

Chalmers, D. J. *The Conscious Mind: In Search of a Fundamental Theory*. Oxford University Press, 1996.
Whitehead, A. N. *Process and Reality*. Free Press, 1978. Strawson, G. "Realistic Monism: Why Physicalism Entails Panpsychism." *Journal of Consciousness Studies*, 2006. Nagel, T. *Mind and Cosmos*. Oxford University Press, 2012. Kastrup, B. *Why Materialism Is Baloney*. Iff Books, 2014.

Physics, Time, and Relational Models

Rovelli, C. *The Order of Time*. Riverhead Books, 2018. Barbour, J. *The End of Time*. Oxford University Press, 1999. Smolin, L. *Three Roads to Quantum Gravity*. Basic Books, 2001. Wheeler, J. A. "It from Bit." In *Complexity, Entropy, and the Physics of Information*, 1990. Deutsch, D. *The Fabric of Reality*. Penguin, 1997.

Information Theory and Systems Thinking

Shannon, C. E. "A Mathematical Theory of Communication." *Bell System Technical Journal*, 1948. Tononi, G. "Integrated Information Theory." *BMC Neuroscience*, 2004-2014. Friston, K. "The Free Energy Principle." *Nature Reviews Neuroscience*, 2010.

Cognitive Science and Identity

Dennett, D. *Consciousness Explained*. Little, Brown, 1991. Metzinger, T. *The Ego Tunnel*. Basic Books, 2009. Varela, F., Thompson, E., and Rosch, E. *The Embodied Mind*. MIT Press, 1991.

Artificial Intelligence and Systems

Hofstadter, D. *Godel, Escher, Bach*. Basic Books, 1979. Russell, S., and Norvig, P. *Artificial Intelligence: A Modern Approach*. Pearson, 2020. Floridi, L. *The Philosophy of Information*. Oxford University Press, 2011.

Appendix A: A Structural Formalisation of Similarity Theory, Version 1.4

A.1 Purpose and Scope

This appendix presents a modest structural formalisation of **Similarity Theory** using labelled directed multigraphs. The purpose of this model is not to provide a mathematical proof of Similarity Theory, nor to reduce its philosophical claims to mathematics. Rather, its purpose is to make the internal architecture of the theory clearer, more consistent, and more available for philosophical and academic discussion.

Similarity Theory begins from the view that consciousness is ontologically primary, that relation is the condition through which consciousness becomes knowable, and that structure emerges through relation. In its simplest philosophical sequence, the theory may be expressed as:

consciousness → **relation** → **structure**

This appendix offers a structural language for representing aspects of that sequence. It models relations, frames, identity continuity, similarity, dimensions, and cross dimensional interaction in a simplified formal way. The model should be understood as a map, not the territory. It clarifies the relational shape of the theory without claiming to capture the full metaphysical depth of consciousness itself.

This formalisation is therefore best understood as **Version 1.4**: an early structural grammar for Similarity Theory. It is intentionally simple, extendable, and cautious. Its value lies in making the theory's internal relationships more visible without creating false mathematical precision.

A.2 Interpretive Cautions

Before presenting the model, several cautions are necessary.

First, the graph model is a **representation of relational structure**, not the ontology itself. A vertex does not equal consciousness. A vertex is only a formal marker, placeholder, or representational position associated with consciousness in structure.

Second, the mapping from consciousness to structural placeholder is **interpretive and partial**. It is not ontological, exhaustive, or literal. The model does not claim that consciousness is a mathematical object. It only provides a way to represent selected relational features associated with consciousness as they appear within structure.

Third, a Frame of Time is represented here as a graph state, but this does not mean that a Frame of Time is merely a static snapshot. The graph is a structural abstraction. It does not capture lived experience, feeling, qualitative awareness, value, meaning, or the full metaphysical reality of consciousness.

Fourth, when this appendix uses formal language, that language should be read as an aid to clarity, not as a completed mathematical system. The model is schematic. It does not claim predictive power, empirical proof, or final formal completeness.

Fifth, the philosophical commitments of Similarity Theory remain distinct from their formal representation. The primacy of consciousness, the metaphysical reality of Frames of Time, and the deeper meaning of relation are not reduced to graph theory. They are interpreted through a graph based model for the purpose of structural clarity.

A.3 Basic Structural Framework

For Version 1.4, Similarity Theory may be represented using a **labelled directed multigraph**:

$$G = (V, E, \ell_V, \ell_E)$$

where:

V is a set of vertices.

E is a set of directed edges between vertices.

ℓ_V is a vertex labelling function.

ℓ_E is an edge labelling function.

In this model, vertices represent formal positions within a relational structure. These positions may be associated with consciousness in structure, identity bearing locations, or relational roles within a frame. Edges represent directed relations between those positions. Labels provide additional meaning, such as the type of vertex or the type of relation.

This model is useful because Similarity Theory is fundamentally relational. It does not begin with isolated objects as final realities. It begins with consciousness and asks how relation gives rise to structure. A graph based model is therefore appropriate because it makes relation visible in the representation.

However, one important point must remain clear: **a vertex is not consciousness itself**. A vertex is only a formal placeholder used to represent a position associated with consciousness within the structural model. Consciousness remains an ontological and philosophical claim of the theory, not a graph element.

A.4 Consciousness, Relation, and Structure

In Similarity Theory, consciousness is not treated as a late product of structure. Rather, consciousness is primary. Structure appears when consciousness enters relation.

In this Version 1.4 model:

Consciousness is represented indirectly through formal positions associated with consciousness in structure.

Relation is represented by directed edges.

Structure is represented by relational configurations of vertices and edges.

A formal position with no edges may be used as a structural analogue for consciousness considered without expressed relation. This does not mean that unrelated consciousness is literally a mathematical point. It only means that, within this model, the absence of expressed relation can be represented by the absence of edges.

The first relation between two formal positions may be represented as the first directed edge between them. This reflects the central philosophical claim that relation is the beginning of knowable structure.

A further clarification is important: **self relation does not require mutual recognition**. A formal position may enter self relation through recognising another, even if the other has not yet recognised it in return. In other words, distinction itself may generate self reflection. Mutual relation may deepen or enrich self relation, but it is not a necessary precondition for it.

Thus:

A vertex without edges represents a formal position associated with consciousness without expressed relation.
A directed edge represents relation.
A self loop may represent a structural analogue of self relation.
A relational configuration represents structure.

This allows the theory's basic sequence to be represented structurally:

consciousness → relation → structure

A.5 Relation Types

For Version 1.4, the model uses a minimal set of relation labels. Too many labels at this early stage would make the model appear more precise than it is. A small set is more honest and more useful.

Let the edge label set be:

LE = {recognition, interaction, memory, self relation}

These may be defined as follows:

Recognition means that one formal position distinguishes or becomes directed towards another in a way that represents awareness, acknowledgement, or relational distinction.

Interaction means that one position affects, influences, responds to, or exchanges relation with another. This is intentionally broad in Version 1.4 and should not be read as a complete model of physical causation, biological exchange, psychological response, or energetic influence. It simply marks directed relational effect within the structural model.

Memory means a structural relation that refers to, preserves, or carries continuity with a previous frame or state. This is a structural analogue of memory, not a claim that memory is literally an edge of consciousness.

Self relation means a reflexive relation in which a position relates to itself. In graph form this may appear as a loop edge, but philosophically it represents only a simplified structural analogue of reflection, self reference, or internal organisation. Self relation may arise from one way recognition because the recognition of another creates distinction, and distinction can allow the recognising position to become aware of itself in relation.

These relation types are not intended to exhaust all possible relations. They are the minimum useful set for Version 1.4.

Later versions may introduce additional relation labels such as transformation, attraction, resistance, care, rupture, repair, or ethical relation. For the first formal model, however, simplicity is a strength.

A.6 Frames of Time as Preserved Structural States

Similarity Theory holds that Frames of Time do not disappear. Each frame remains preserved as part of the total structure of existence. Time, in this theory, is not treated as an independent object, force, or flowing substance. It is better understood as the measurement of difference between states of consciousness, relation, and structure.

In the structural model, a **Frame of Time** may be represented as a labelled directed multigraph:

$$G_t = (V_t, E_t, \{V_t, \{E_t\})$$

where t belongs to an ordered set T .

The ordered set T does not need to be understood as ordinary clock time. It simply indexes frames in a sequence of relational development. Each frame represents a preserved structural state.

The set of all frames may be written as:

$$\{G_t\}_{t \in T}$$

This sequence should be understood as an accumulating archive. Later frames are constructed as new relational configurations. They may contain additional vertices, additional edges, different labels, different active relations, or more complex relational configurations than earlier frames. However, earlier frames are not edited, overwritten, or deleted. They remain preserved as part of the ordered family of frames.

This is important because it protects one of the core claims of Similarity Theory: change does not erase the reality of prior states. Rather, new states emerge while previous frames remain structurally preserved.

In plain language: what has occurred is not destroyed by what comes after. It remains as part of the deeper archive of relational reality.

A.7 Identity Continuity Across Frames

One of the central problems in philosophy is the persistence of identity. If a being changes across time, in what sense is it still the same being?

Similarity Theory does not treat identity as a frozen essence. Identity is better understood as continuity through transformation. A child, an adult, and an elder are not identical in form, yet they belong to a recognisable continuity. The same principle may apply more broadly to consciousness, memory, death, transformation, and dimensional development.

In the structural model, identity continuity may be represented using an underlying entity set:

U

For each frame $t \in \mathbf{T}$, there is a partial identity mapping:

it: $U \rightarrow Vt$

This means that an underlying entity $u \in U$ may be associated with a vertex in a given frame. The mapping is partial because not every entity must appear in every frame, and not every frame must contain every identity.

Identity continuity occurs when the same underlying entity is associated with formal positions across multiple frames.

For example:

i1(A) = a1

i2(A) = a2

i3(A) = a3

This means that entity **A** is represented by different formal positions in different frames, while still being tracked as the same identity stream.

This is compatible with Similarity Theory because it allows identity to change structurally without disappearing. Identity does not require exact sameness. It requires continuity of relation across frames.

This model has limits. The identity mapping **it: $U \rightarrow Vt$** is a Version 1 convenience. It is not a claim that identity is metaphysically discrete in any final sense. It assumes that identity can be tracked through formal markers, but it does not yet fully model merging, splitting, distributed consciousness, identity rupture, or reconverging identity streams. These require future development.

A.8 Similarity as Partial Structural Resemblance

The word “similarity” must be handled carefully. Similarity Theory does not claim that different things are identical. It does not claim that an atom is literally a solar system, that a cell is literally a civilisation, or that a human being is literally a universe. Such claims would be too crude.

Instead, Similarity Theory claims that structures may resemble one another across different scales, contexts, or rule sets.

In the structural model, similarity may be represented through a partial structure preserving mapping:

$\sigma: Gt \rightarrow Gt'$

For Version 1.4, such a mapping preserves adjacency, direction, vertex labels, and edge labels where it is defined. It does not need to map every part of one graph to every part of another graph. It only needs to preserve a recognisable substructure.

This is why **partial isomorphism** or **shared subgraph similarity** is more suitable than full graph isomorphism.

A full graph isomorphism would require two structures to match exactly. That is too strict for Similarity Theory. The theory is not about exact repetition. It is about recurring relational configurations.

A partial similarity mapping allows one structure to contain or echo part of another structure.

For example, if Frame 2 contains the relation:

$A \rightarrow B$

and Frame 3 contains:

$A \rightarrow B$

$A \rightarrow A$

then Frame 3 contains the recognition pattern of Frame 2, but extends it through self relation. The structures are not identical, yet there is a recognisable continuity of pattern.

This is the formal meaning of similarity in Version 1.4:

Similarity is partial structural resemblance across frames, systems, scales, or rule sets.

Whether such mappings must always be injective is left open in Version 1.4. In many cases, injective mappings may be useful when comparing preserved substructures. In other cases, non injective mappings may be needed where a more complex structure is simplified into a lower rule set.

A.9 Dimensions as Rule Sets

In Similarity Theory, dimensions are not merely places, spatial layers, or science fiction realms. A dimension is better understood as a **rule set of existence**. It determines what kinds of relations, behaviours, and structures are possible.

In the structural model, a dimension may be represented schematically as a constraint system:

D

A dimension **D** is a set of graph theoretic constraints on allowed vertices, edges, labels, or relational configurations. A frame **Gt** belongs to dimension **D** if it satisfies the constraints of that dimension.

This allows dimensions to be represented not as locations, but as permitted relational grammars.

This representation is intentionally schematic. It does not claim that dimensions are mathematically complete constraint systems in any final sense. Rather, it provides a useful way to model the idea that different forms of existence operate under different relational permissions and limitations.

The examples below are illustrative rule set examples. They are not intended as rigid metaphysical partitions of reality. They show how the theory's dimensional language may be represented structurally in a simplified Version 1 model.

Dimension 1: Existence

Dimension 1 may permit basic existence and minimal physical relation. In this simplified model, it may allow basic vertices and minimal interaction, but not biological growth, agency, memory, or self relation.

This corresponds to inanimate matter such as particles, atoms, molecules, sand, and rocks. These are not dormant in the sense of absolute inactivity. They are active through physical bonds, forces, and interactions. However, they do not possess biological growth or autonomous agency.

Dimension 2: Growth and Responsiveness

Dimension 2 may allow adaptive relation, growth, environmental response, and structural development. Plants may be understood through this rule set.

A plant interacts with sunlight, soil, water, gravity, temperature, and seasonal change. It responds and grows, but it does not operate with the autonomous agency or symbolic self reflection associated with Dimension 3.

Dimension 3: Agency and Reflective Relation

Dimension 3 allows movement, perception, memory, agency, decision, and self relation. Animals and humans belong to Dimension 3, though they may occupy different layers within that dimension.

This distinction is important. A dog, a human, and a philosopher are not in different dimensions merely because their capacities differ. They are within Dimension 3 but operate at different layers of relational complexity.

In this way, dimensions can be understood as rule sets, while layers describe differences of complexity within the same rule set.

A.10 Cross Dimensional Interaction

Similarity Theory allows for cross dimensional interaction. A higher rule set may act upon a lower rule set, but the lower rule set cannot fully interpret or reconstruct the higher one.

In the structural model, this may be represented as a structure forgetting mapping:

F: Ghigher → Glower

This mapping removes, collapses, or simplifies structural information. It is generally not invertible. That means the lower dimensional structure cannot reconstruct the full higher dimensional structure from its own limited rule set.

The phrase **structure forgetting mapping** is used here in a modest and schematic sense. It is inspired by the idea of forgetful functors in category theory, where certain structure is ignored or left behind when moving from one formal context to another. However, Version 1.4 is not claiming a fully formal category theoretic functor. It is using the idea as a structural analogy for how a richer rule set may be simplified when received by a more limited rule set.

For example, when a human interacts with a plant, the human may act with intention, memory, agency, and symbolic understanding. The plant may register the interaction as light, shadow, pressure, damage, support, water, chemical change, or environmental stimulus. The plant participates in the interaction, but it does not interpret the human as a human in the human sense.

Structurally, the mapping from the human frame to the plant frame may forget agency, language, symbolic intention, and reflective self relation. What remains is a simplified interaction compatible with the plant's rule set.

A similar example can be seen in animals. A dog may recognise human behaviour with remarkable sensitivity. It may understand tone, routine, movement, emotional atmosphere, and repeated patterns. Yet it does not reconstruct the full human world of law, mathematics, abstract philosophy, or symbolic metaphysics.

This does not make the dog inferior in a moral sense. It simply means the dog operates through a different relational layer within the broader rule set of Dimension 3.

The same principle may apply to humans in relation to higher dimensional structures. A human may encounter something beyond ordinary interpretation and experience it as dream, intuition, anomaly, spiritual perception, symbolic event, or mystery. The lower rule set receives an effect, but not the complete structure of the higher cause.

This provides a possible way to discuss higher and lower dimensional interaction without requiring crude literalism.

A.11 Worked Example: Five Frames

The following simple example is illustrative rather than canonical. It shows one possible structural pattern and should not be read as the only or primary pattern through which relation, identity, and similarity may appear.

This revised example also clarifies an important point: **self relation does not require mutual recognition**. A may develop self relation after recognising B, even if B has not yet recognised A.

Let the underlying entity set be:

$$U = \{\mathbf{A}, \mathbf{B}\}$$

In this example, **A** and **B** are not consciousness itself as mathematical objects. They are underlying identity markers used to track continuity across frames.

Frame 1: Unrelated Consciousness Represented Structurally

Let:

$$V1 = \{\mathbf{a1}, \mathbf{b1}\}$$

$$E1 = \emptyset$$

Identity mapping:

$$i1(\mathbf{A}) = \mathbf{a1}$$

$$i1(\mathbf{B}) = \mathbf{b1}$$

Interpretation:

A and B are represented by formal positions with no expressed relation between them. This provides a structural analogue of unrelated consciousness.

This is not absolute nothingness. It is consciousness considered without expressed distinction or relation.

Frame 2: First Recognition

Let:

$$V2 = \{a2, b2\}$$

Edges:

a2 → b2 labelled **recognition**

Identity mapping:

$$i2(A) = a2$$

$$i2(B) = b2$$

Interpretation:

A is structurally represented as recognising B. Within this simplified example, the first recognition is treated as the first represented relation.

Frame 2 is not a deletion or modification of Frame 1. It is a new preserved relational state.

Frame 3: Self Relation Through Recognition

Let:

$$V3 = \{a3, b3\}$$

Edges:

a3 → b3 labelled **recognition**

a3 → a3 labelled **self relation**

Identity mapping:

$$i3(A) = a3$$

$$i3(B) = b3$$

Interpretation:

A continues to recognise B. Through that recognition, A also develops self relation. This represents the idea that the recognition of another can create distinction, and distinction can allow the recognising position to become aware of itself in relation.

At this stage, B has not yet recognised A. Therefore, this frame shows self relation arising without mutual recognition.

Similarity:

Frame 3 contains the recognition pattern of Frame 2, but extends it through self relation.

Frame 4: Mutual Recognition Begins

Let:

V4 = {a4, b4}

Edges:

a4 → b4 labelled **recognition**

a4 → a4 labelled **self relation**

b4 → a4 labelled **recognition**

Identity mapping:

i4(A) = a4

i4(B) = b4

Interpretation:

B now recognises A. Mutual recognition begins, but A has already developed self relation through its earlier recognition of B.

This frame captures an asymmetry of development: the first witness may temporarily be one step ahead in reflective relation. However, this does not mean the other position remains permanently behind.

Similarity:

Frame 4 contains the recognition and self relation pattern of Frame 3, but adds B's recognition of A.

Frame 5: Mutual Development

Let:

V5 = {a5, b5}

Edges:

a5 → **b5** labelled **recognition**
b5 → **a5** labelled **recognition**
a5 → **a5** labelled **self relation**
b5 → **b5** labelled **self relation**

Identity mapping:

i5(A) = a5
i5(B) = b5

Interpretation:

A and B now both participate in recognition and self relation. This does not imply perfect equality, final symmetry, or fixed hierarchy. It only illustrates that B may develop self relation after recognising A, and that mutual recognition can deepen the relational field.

From this point, A may develop further, B may catch up, B may surpass A, or both may develop in different ways. The graph does not determine the future. It only represents one possible relational sequence.

Similarity:

Frame 2's recognition pattern is preserved within later frames.
Frame 3's recognition plus A's self relation pattern is preserved within later frames.
Frame 4's mutual recognition pattern is preserved within Frame 5.
Frame 5 extends earlier relational configurations without erasing them.

Identity continuity:

A is tracked across frames as:

a1 → **a2** → **a3** → **a4** → **a5**

B is tracked across frames as:

b1 → **b2** → **b3** → **b4** → **b5**

This example illustrates one way identity may be represented through changing relational structures, and how later frames can contain, echo, or extend earlier relational configurations.

A.12 What the Model Structurally Represents

This Version 1.4 model can structurally represent several important parts of Similarity Theory.

It can represent:

Frames as preserved graph states.
Relations as directed labelled edges.
Structures as relational configurations.
Identity continuity through mappings across frames.
Similarity as partial structural resemblance.

Dimensions as schematic rule sets or constraint systems.
Cross dimensional interaction as structure forgetting mapping.
Frame preservation as an accumulating archive.
Self relation as a possible consequence of one way recognition, not only mutual recognition.

These are useful structural clarifications. They allow the theory's internal architecture to be discussed with greater clarity.

However, these components are structurally represented, not exhaustively formalised. The model should not be read as a complete mathematical system.

A.13 What the Model Does Not Formalise

The model does not formalise every claim in Similarity Theory.

The following remain philosophical commitments:

Consciousness is ontologically primary.
Consciousness can exist without relation.
Relation is the condition of knowing.
Structure is the expression of consciousness.
Curiosity may drive relational expansion.
Meaning, value, love, purpose, and ethical depth are real features of conscious relation.
Frames of Time have metaphysical reality beyond their representation as graphs.

These claims may be interpreted through the structural model, but they should not be reduced to it.

This distinction is important. If the model tried to reduce consciousness itself to a graph, it would betray the theory it is meant to clarify. The graph is only a representation of relational structure, not the source of consciousness.

A.14 Risks and Limitations

This model has several limitations.

First, it may oversimplify consciousness by associating consciousness in structure with vertices. This must be handled carefully. The vertex is not consciousness itself; it is a formal placeholder within the model.

Second, frames may appear too static. A graph state can represent a preserved structural configuration, but it does not fully capture lived experience, feeling, awareness, intensity, or qualitative presence.

Third, relation labels may appear arbitrary. The labels recognition, interaction, memory, and self relation are philosophically motivated, but they are not derived from a completed mathematical system.

Fourth, the identity mapping assumes that some continuity can be tracked across frames. This is useful, but it may need refinement when dealing with radical transformation, distributed consciousness, identity rupture, merging, splitting, or reconvergence.

Fifth, dimensions as constraint systems may risk becoming too rigid if treated literally. In Similarity Theory, dimensions are conceptual rule sets for understanding existence, not crude boxes into which reality must be forced.

Sixth, the Version 1.4 model does not yet explain the full dynamics of how relations generate new frames. It describes relational states and their preservation, but it does not yet provide a complete generative process.

Seventh, the worked example remains illustrative rather than canonical. It shows one possible sequence, not a universal law requiring all relation, recognition, or self relation to unfold in that exact order.

These limitations do not invalidate the model. They show why it should remain modest. Version 1.4 is a structural aid, not a final theory of everything.

A.15 Future Development

Future versions of this formalisation may develop in several directions.

A more advanced graph model could introduce weighted relations, allowing different relations to carry different strengths, intensities, or degrees of influence.

A dynamic model could describe how frames are generated, not only how they are preserved.

A richer identity model could address distributed consciousness, identity rupture, reconvergence, merging, splitting, and transformation after major structural change.

A category theoretic version may later represent vertices as objects, relations as morphisms, frames as categories or diagrams, and cross dimensional mappings as forgetful functors.

A relational algebra version may help classify entities, frames, relations, dimensions, and similarity mappings more systematically.

Future versions may also examine whether self relation can emerge through different kinds of encounter, including one way recognition, mutual recognition, contrast with non-responsive entities, memory, or resistance.

However, these developments should come later. Version 1.4 should remain simple, readable, and faithful to the philosophical heart of Similarity Theory.

The aim is not to make the theory look mathematical for appearances. The aim is to give its relational architecture a clear structural form.

A.16 Closing Statement

This appendix has presented a first structural formalisation of Similarity Theory. It uses labelled directed multigraphs to represent relations, frames, identity continuity, similarity, dimensions, and cross dimensional interaction.

The model does not prove Similarity Theory, nor does it replace its philosophical foundation. Instead, it shows that the theory possesses an internal architecture capable of structural representation.

This matters because Similarity Theory is not merely a collection of metaphors. Its central concepts relate to one another in an ordered way. Consciousness gives rise to relation. Relation gives rise to structure. Structures persist as frames. Frames may resemble one another through partial similarity. Dimensions constrain what relations are possible. Higher rule sets may act upon lower rule sets in ways that lower structures cannot fully reconstruct.

Version 1.4 adds one important clarification: self relation does not require mutual recognition. Recognition of another may itself create the distinction necessary for self reflection. Mutual relation may deepen, balance, or transform that process, but it is not the required starting point.

In this sense, structural formalisation gives Similarity Theory a bridge between philosophical prose and academic analysis. It does not make the theory complete, but it makes the theory clearer, stronger, and more available for future development.