Ontology of Organization

Toward a Relational Ontology of Persistent Organization

The Principle of Systematic Exclusion as a Generative Theory of Organized Systems

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PSE Monographs (Series Statement)

The PSE Monograph Series develops the theoretical, conceptual, and empirical foundations of the PSE Research Programme.

The programme investigates whether organization may be treated as a fundamental object of scientific investigation and whether the emergence, persistence, and transformation of organized systems can be explained through a common generative organizational principle operating across multiple domains of reality.

Each monograph addresses a distinct scientific question while contributing to a cumulative investigation of organization across physical, biological, cognitive, symbolic, institutional, technological, and social systems.

Together, the series develops a cumulative conceptual framework without reducing domain-specific theories to a single explanatory model. Established scientific disciplines retain their explanatory autonomy while being interpreted as complementary investigations of different realizations of organized reality.

This volume develops the ontological foundations of the programme by examining the Principle of Systematic Exclusion as the programme's proposed generative organizational principle and by deriving the Generative Architecture of Organization. The following monographs progressively extend this ontological framework to reflective organization, biological individuality, consciousness, artificial intelligence, institutions, ethics, attachment and social cohesion, and civilization and cultural evolution.

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Ontology of Organization

The Principle of Systematic Exclusion as a Generative Theory of Organized Systems

Preface

The PSE Research Programme investigates whether organization may be treated as a fundamental object of scientific investigation. The Foundational Charter (Monograph No. 1) established the programme's methodological principles and long-term research strategy. The programme's canonical conceptual vocabulary is defined in Monograph No. 1A – Canonical Glossary and Conceptual Dependency Map. The present monograph develops its ontological foundations. The monographs that follow develop this programme through progressively more specific theoretical and empirical investigations.

This second volume develops the ontological foundations of the PSE Research Programme by examining whether organized systems across physical, biological, cognitive, symbolic, and social domains may be understood as successive realizations of a common generative organizational architecture.

The Principle of Systematic Exclusion (PSE) is proposed as the programme's generative organizational principle from which the generative architecture of organization is derived.
It is developed as the programme's proposed ontological explanatory principle within a domain-independent framework applicable across multiple scientific disciplines. Established scientific explanations therefore retain their explanatory autonomy while becoming conceptually comparable within a broader organizational framework (Maturana & Varela, 1980; Deacon, 2012).
Throughout this monograph, foundational organizational concepts retain the canonical definitions established in Monograph No. 1A – Canonical Glossary and Conceptual Dependency Map, unless explicitly specialized for the ontological purposes of the present volume.

The argument proceeds in four stages. It first examines why organization remains a fundamental scientific problem despite extensive domain-specific explanations. It then derives a generative architecture from the Principle of Systematic Exclusion and investigates whether this architecture recurs across biological and reflective systems. The monograph concludes by considering the implications of this recurrence for a relational ontology of organization and for future interdisciplinary research.

The following monographs progressively extend the ontological framework to biological individuality, reflective organization and transgression, consciousness, artificial intelligence, institutions, ethics, attachment, love and social cohesion, and civilization and cultural evolution.

The central question guiding the present investigation remains deliberately simple:

What makes organization possible?

Abstract

Organization is a defining characteristic of natural systems, yet no general ontological framework explains why organized systems emerge and persist across domains that differ fundamentally in material substrate, mechanism, and scale. Living cells maintain their organization despite continual molecular turnover; organisms preserve identity throughout development; ecosystems retain characteristic relational structures despite ongoing changes in species composition; cognitive and symbolic systems similarly sustain coherent organization while their constituent elements continuously change.

This volume investigates whether these diverse phenomena may be understood as successive realizations of a common generative organizational principle. It develops the Principle of Systematic Exclusion (PSE) as the programme's proposed generative organizational principle, proposing that persistent organization emerges through the progressive restriction of organizational possibilities. Distinction gives rise to systematic exclusion; exclusion establishes boundaries; boundaries generate constraints; constraints enable selective persistence; selective persistence produces coherence; coherent organization acquires persistence and recognizable identity.

This sequence constitutes the proposed generative architecture of organization. It follows the canonical conceptual dependency established in Monograph No. 1A and is developed here as an ontological explanatory architecture.

The architecture is subsequently examined across biological, cognitive, symbolic, and reflective domains. Its recurrence across domains despite profound differences in mechanism and material realization is described as organizational scale invariance. The resulting framework supports a relational ontology in which organized systems are understood through the persistence of organizational relationships that continuously regenerate their material realization.

The Principle of Systematic Exclusion is presented as an ontological framework that complements established scientific theories by providing a common generative organizational architecture within which domain-specific explanations retain their explanatory autonomy while becoming conceptually comparable.

Keywords

Principle of Systematic Exclusion, Holoscript, organization, organizational theory, systems theory, relational ontology, emergence, constraint, selective persistence, organizational persistence, biological organization, organizational scale invariance, complexity, teleodynamics

Part I - The Ontological Problem

Chapter 1 - The Problem of Organization

1.1 A Universal Scientific Question

Organization is one of the most pervasive characteristics of organized reality.
Atoms form molecules. Molecules form cells. Cells form organisms. Organisms establish ecosystems. Individuals establish societies. Ideas develop into conceptual frameworks. Across every domain examined by contemporary science, relatively stable organizations emerge, persist for varying periods, and eventually transform or disappear.

Recurring patterns and similarities across organized systems have long attracted scientific and philosophical attention (von Bertalanffy, 1968; Prigogine & Stengers, 1984; Simon, 1962; Kauffman, 1993; Mitchell, 2009). The recurrence of comparable structural patterns raises a fundamental question:

> *Do these recurring similarities reflect only coincidence, or do they indicate a more general organizational principle?*

Most scientific disciplines approach this question from within their own domain. Physics investigates forces and conservation laws. Biology studies evolution and adaptation. Cognitive science examines perception and information processing. Sociology analyzes institutions and collective behavior.
Each perspective contributes essential insights. Together they describe many mechanisms through which organization develops (Deacon, 2012; Simon, 1962).
Yet a more fundamental question remains largely untouched.

> *What enables organization itself?*

This question precedes the distinction between living and non-living systems, between physical and biological processes, or between matter and mind. Before any particular organization can exist, conditions must exist under which organization becomes possible.

The search for these organizational conditions forms the point of departure of this monograph.

1.2 Beyond Domain-Specific Explanations

Scientific explanations typically operate within well-defined domains.
Evolution explains biological adaptation. Thermodynamics describes energy transformations. Information theory characterizes communication and uncertainty. Network theory investigates relational structure.

Each framework successfully explains phenomena within its intended scope. Difficulties arise when concepts developed for one domain are extended beyond the organizational conditions

under which they were originally established. Explanatory success within one context does not automatically imply universal applicability.

This observation has contributed to a growing interest in interdisciplinary approaches, particularly systems theory, cybernetics, complexity science, and studies of self-organization (Wiener, 1948; von Bertalanffy, 1968; Prigogine & Stengers, 1984; Mitchell, 2009).
These traditions recognize that many organizational principles recur across different domains without necessarily depending on identical physical mechanisms.

Their work suggests that organization itself deserves investigation as a primary object of inquiry. This monograph continues that line of inquiry by addressing an additional ontological question:

> *What universal condition allows organized systems to emerge in the first place?*

1.3 The Central Hypothesis

The Principle of Systematic Exclusion proposes that every organized system exists through the continuous exclusion of alternatives incompatible with its persistence.
Every boundary excludes. Every identity excludes. Every function excludes. Every organization excludes.

Persistence therefore depends upon selective constraint. Stable organization emerges because some configurations remain compatible with surrounding conditions while others are progressively eliminated.
Viewed from this perspective, exclusion is neither accidental nor secondary. It constitutes the generative process through which coherent organization becomes possible.

- This principle applies independently of *scale*. Although the mechanisms differ across physical, biological, cognitive, and social systems, the underlying generative organizational architecture is proposed to remain invariant.

1.4 Scope

The following chapters develop this proposition from first principles. The argument begins with the emergence of distinction and progressively derives boundaries, constraints, coherent organization, persistence, identity, and increasingly complex forms of organization. Throughout this development, the central question remains unchanged:

> *Can the emergence and persistence of organized systems be understood as successive expressions of a single generative organizational principle?*

The central hypothesis explored throughout this volume is that the Principle of Systematic Exclusion provides such an ontological foundation from which increasingly complex forms of organization may be understood across multiple organizational levels.

The cross-domain examination undertaken here is necessarily selective. Biological and cognitive-symbolic organization provide the principal comparative domains. Physical, technological, institutional, and social organization are examined in subsequent monographs of the PSE Research Programme.

Chapter 2 - Existing Explanations of Organization

2.1 Organization Across Scientific Disciplines

One of the defining characteristics of contemporary science is that virtually every discipline investigates organized systems. Physics studies the organization of matter and energy. Chemistry examines the formation and persistence of molecular structures. Biology investigates living organization across multiple levels, from cells to ecosystems. Cognitive science explores the organization of perception, memory, and behaviour. The social sciences examine institutions, economies, cultures, and collective behaviour.

Despite these differences in subject matter, a common observation emerges. Organization is everywhere. It appears repeatedly across profoundly different domains, scales, and mechanisms. This recurrence raises an important scientific question.

> *Do these disciplines investigate fundamentally different forms of organization, or do they examine different realizations of a common generative organizational principle?*

The remainder of this chapter examines several influential approaches that have addressed this question from complementary perspectives.

2.2 The Fragmentation of Organizational Theory

Scientific progress has produced increasingly sophisticated explanations of organized systems. Thermodynamics explains the emergence of dissipative structures under conditions far from equilibrium (Prigogine & Stengers, 1984). Evolutionary biology explains adaptive change through natural selection (Darwin, 1859). Systems biology investigates interacting networks of biological processes (Kitano, 2002). Complexity science studies emergent behaviour arising from local interactions (Mitchell, 2009). Hierarchical organization has likewise been analyzed as a general property of complex systems (Simon, 1962). Network science reveals common structural properties shared by many complex systems (Barabási, 2016).

Each of these approaches has significantly advanced the understanding of organization within its own domain.
Collectively, these approaches also reveal an important characteristic of contemporary scientific inquiry: explanations of organization remain closely connected to the particular mechanisms operating within the domain under investigation.
Physical organization is explained through physical processes. Biological organization through biological processes. Cognitive organization through cognitive mechanisms.

Consequently, organization itself often remains implicit. *The mechanisms differ*, yet the question of why organized systems emerge at all remains largely outside the scope of individual disciplines.

2.3 Converging Perspectives

Despite their methodological differences, these theoretical traditions converge upon several recurring organizational observations.

Organization depends upon relationships rather than isolated components. Boundaries distinguish organized systems from their surroundings, while constraints contribute to stability and persistence (von Bertalanffy, 1968; Maturana & Varela, 1980; Prigogine & Stengers, 1984; Deacon, 2012). Complexity science likewise shows how organized behaviour can emerge dynamically through interactions among multiple components (Mitchell, 2009).

These recurring themes appear in different forms throughout systems theory, complexity science, autopoiesis, and teleodynamics. Together they suggest that organization possesses properties extending beyond individual scientific disciplines. The convergence itself therefore becomes scientifically significant.

The convergence of these independent research traditions provides the motivation for asking whether organization itself possesses domain-independent ontological conditions.

2.4 The Remaining Question

The convergence of existing theories provides an increasingly coherent picture of organized systems. Yet an important question remains unresolved.

> *What general organizational conditions enable domain-specific mechanisms to generate and sustain persistent organization?*

Thermodynamics describes the energetic conditions under which organized structures can develop (Prigogine & Stengers, 1984). Evolutionary theory accounts for biological adaptation through processes of variation and selection (Darwin, 1859). Autopoiesis characterizes the operational closure of living systems (Maturana & Varela, 1980). Teleodynamics investigates the persistence of mutually supporting constraints (Deacon, 2012). Complexity science investigates how collective behaviour can emerge from interactions among multiple components (Mitchell, 2009).

Each framework illuminates an essential aspect of organization.
But the more general condition under which organization itself becomes possible has received far less attention.

The following chapter addresses this question by developing the Principle of Systematic Exclusion as the programme's proposed generative organizational principle and examining its ontological consequences.

Part II. Organization, the Generative Architecture

Chapter 3 - The Principle of Systematic Exclusion

3.1 From Organization to Distinction

Every organized system is distinguishable from its surroundings.
A living cell maintains a membrane separating intracellular from extracellular processes. An ecosystem occupies ecological boundaries within which characteristic interactions persist. A language distinguishes meaningful expressions from arbitrary combinations of sounds. Scientific theories define conceptual boundaries separating explanatory coherence from contradiction.

These examples differ profoundly in composition, scale, and mechanism. Yet each presupposes the existence of a distinction that separates one coherent organization from the multitude of alternative configurations that could have existed.

Organization therefore requires *a context* within which distinction becomes possible. Within that context, distinction differentiates an organized system from what surrounds it.
Without distinction, no boundary can emerge; without boundaries, organization cannot persist. Distinction is consequently the first differentiating condition in the generative architecture of organization, while Context provides the relational condition within which such distinction can arise.

The foundational role of distinction has important precedents in formal and systems thinking, particularly in Spencer-Brown's *calculus of distinctions* (Spencer-Brown, 1969). The present monograph extends this formal insight by examining its ontological consequences for the emergence of persistent organization.

3.2 Distinction as Selective Exclusion

A distinction does more than identify a difference.

- *Every distinction simultaneously excludes*.

Whenever one organizational state becomes established, innumerable alternative states remain unrealized. Whenever one interaction persists, many others become impossible. Whenever one organizational pathway is maintained, competing possibilities are progressively eliminated. Exclusion is therefore inseparable from organization itself.

This observation applies independently of material composition. It characterizes physical systems, biological evolution, cognitive organization, technological systems, and symbolic structures alike.
The emergence of organization is therefore accompanied by the progressive restriction of organizational possibilities.

3.3 The Principle of Systematic Exclusion

Within the PSE Research Programme, the Principle of Systematic Exclusion proposes that persistent organization emerges through the continuous exclusion of organizational possibilities incompatible with its continued existence.
As such, exclusion should not be understood as a destructive process imposed upon an already existing organization. It is the generative process through which coherent organization becomes possible.

Every organized system exists because a limited set of relations persists while countless alternatives do not. This direct elimination or non-persistence of organizational possibilities incompatible with continued persistence is termed first-order exclusion. It constitutes the foundational form of systematic exclusion examined throughout this monograph.

Systematic exclusion therefore performs two complementary functions.

- It establishes organizational distinction.
- It preserves organizational coherence through time.

Together these two functions generate the conditions required for persistent organization.

3.4 A Domain-Independent Principle

The Principle of Systematic Exclusion is formulated independently of any particular scientific discipline while remaining open to empirical evaluation within individual domains. It does not depend upon biological evolution, physical laws, symbolic reasoning, or social organization, although each of these domains provides examples of its operation.

The mechanisms through which exclusion operates differ among domains.
The proposed organizational logic may remain *invariant*.

- *This distinction is fundamental.*

Scientific explanations remain domain-specific because the mechanisms responsible for organization differ substantially across organizational levels. The ontological conditions under which organization emerges may nevertheless remain invariant.

The following chapters examine whether this proposition can account for increasingly complex forms of organization without abandoning its generality.

3.5 Organizational Scale Invariance

If the Principle of Systematic Exclusion provides a valid ontological explanatory principle, its organizational consequences should not be restricted to a single scientific domain. Instead, the same generative organizational architecture should recur across successive organizational levels while being realized through different physical, biological, cognitive, or social mechanisms. Comparable recurrence across organizational levels has long been recognized in analyses of hierarchical complexity, although such analyses generally describe recurring structures without proposing the generative ontological mechanism advanced here (Simon, 1962).

- Within the PSE Research Programme this property is described as *organizational scale invariance* (OSI).

Organizational scale invariance does not imply that identical mechanisms operate across different domains. It proposes that the organizational relationships generated through systematic exclusion exhibit a recurring architecture despite differences in substrate, scale, and causal processes.

The following chapters investigate this proposition across biological, cognitive, symbolic, and reflective organization in order to evaluate whether the proposed organizational architecture recurs despite differences in substrate, scale, and mechanism.

Chapter 4 - The Generative Architecture of Organization

- *Every organized system can be understood as the progressive consequence of a single generative process. The following sections derive this generative architecture step by step.*

4.1 Distinction: *The Beginning of Organization*

Every scientific description begins by making distinctions. Objects are distinguished from their surroundings, processes from states, causes from effects, and systems from environments. Distinction is therefore not merely a feature of scientific thought; it is a prerequisite for recognizing organization itself.

The same applies to organized reality. An organized system can exist only if it is distinguishable from what it is not. Without distinction there can be neither identity nor interaction, because every possible relation would remain equally undifferentiated.

- Within a given context, distinction constitutes the first differentiating condition of organization. It does not yet produce organization. It establishes the differentiation through which subsequent organizational relations can emerge.

4.2 Systematic Exclusion

Every distinction simultaneously excludes.
To distinguish one possibility from another is to retain one organizational configuration while leaving alternative configurations unrealized. Distinction therefore does more than identify differences; it continuously reduces the space of possible organizations.

This reduction is not accidental. It is systematic because every persistent distinction repeatedly excludes incompatible alternatives throughout the continued existence of the system.

The Principle of Systematic Exclusion expresses this fundamental observation. Organization becomes possible because the overwhelming majority of potential organizational states never become realized or fail to persist once realized.

- Exclusion should therefore be understood as a generative process. It continuously shapes the conditions under which coherent organization may emerge.

4.3 Boundary Formation

Persistent exclusion produces boundaries.
A boundary is the organizational consequence of a distinction that remains sufficiently stable through time to separate one coherent domain of interaction from another.

Boundaries are often represented physically, such as cellular membranes or ecological transitions, yet their organizational significance extends far beyond physical separation. A legal system possesses boundaries, as does a language, a scientific discipline, or a conceptual framework.
Boundaries determine which interactions belong to a system and which remain external to it.

- Every organized system therefore exists through boundaries established and maintained by systematic exclusion.

4.4 Constraint

Boundaries inevitably constrain.
Constraint should not be interpreted as the suppression of organization. It is the condition through which organization becomes possible.

Without constraint, every interaction would remain equally probable. No coherent pattern could persist because every organizational configuration would dissolve into unlimited alternatives.

Constraints progressively reduce this uncertainty. They channel interactions toward a comparatively small number of organizational trajectories capable of remaining coherent under prevailing conditions.

- Constraint therefore transforms organizational boundaries into stable organizational structure.

The constitutive role of constraint in the emergence of higher-order organization has also been emphasized in teleodynamic accounts, in which organized processes arise through mutually reinforcing constraints (Deacon, 2012). Comparable analyses of hierarchical organization likewise emphasize the organizational significance of constrained interactions across levels (Simon, 1962).

Within the present framework, constraint constitutes one stage in the broader generative architecture derived from systematic exclusion.

4.5 Selective Persistence

Constraint alone does not produce organization.
Organization emerges when constrained interactions persist while competing alternatives disappear. This process is described here as selective persistence.

Selective persistence is the continuous retention of organizational relationships that remain compatible with surrounding conditions while incompatible relationships are progressively eliminated.

Persistence is therefore never absolute. It is continuously regenerated through the ongoing interaction between organized systems and their changing contexts.

- Selective persistence thus constitutes the dynamic consequence of systematic exclusion.

4.6 Coherence

As selective persistence continues, relationships become increasingly integrated. Interactions that repeatedly prove mutually compatible form stable relational networks whose collective organization exceeds the significance of their individual components.
This condition is described as coherence.

Coherence expresses the internal consistency of organizational relationships. It is an emergent property generated by selective persistence rather than a property imposed upon a system from outside.

- The persistence of coherence enables organized systems to withstand continual material, energetic, and informational change without losing their organizational identity.

4.7 Persistent Organization

Coherent organization becomes persistent when its relational structure continues despite the ongoing replacement of its constituent components.
Persistent organization therefore does not imply permanence. Every organized system changes continuously.

Atoms exchange energy. Cells replace molecules. Organisms renew tissues. Ecosystems undergo species turnover. Cultures transform across generations.
Persistence resides in the continuity of organizational relationships rather than in the permanence of material constituents.

This distinction separates organization from substance. The distinction between organizational continuity and material turnover is particularly explicit in theories of autopoiesis (Maturana & Varela, 1980) and in contemporary discussions of biological individuality (Pradeu, 2016).

- Organization persists because relational coherence is continuously regenerated through *systematic exclusion*.

4.8 Identity

Identity represents the highest organizational consequence of persistent organization. A system acquires identity when its organizational continuity becomes sufficiently stable to remain recognizable despite continuous internal transformation.

Identity is therefore neither an intrinsic property nor a fixed substance. It is an emergent consequence of persistent relational organization.

- Different organizational domains realize identity through different mechanisms, yet each depends upon the same generative sequence developed throughout this chapter.

4.9 The Generative Architecture of Organization

The preceding sections derive a single sequence linking the emergence of distinction to the persistence of organized identity.

This sequence constitutes the central ontological architecture proposed throughout the PSE Research Programme.

Reality
↓
Context
↓
Distinction
↓
Systematic Exclusion
↓
Boundary
↓
Constraint
↓
Selective Persistence
↓
Coherence
↓
Persistent Organization
↓
Identity

The sequence expresses the conceptual dependencies through which the generative architecture is developed. From *Context* onward, each organizational stage is proposed to establish conditions for the stage that follows. Together, the stages constitute a continuous generative sequence in which the omission of any intermediate relation would alter the proposed architecture.

The architecture therefore proposes that domain-specific mechanisms may realize recurring organizational relationships at different organizational levels. Increasingly complex forms of organization may thus express the same underlying generative principle through fundamentally different mechanisms.

The following chapters examine whether this organizational architecture recurs across biological, cognitive, symbolic, and reflective domains despite differences in scale, substrate, and mechanism.

Part III. - Organization across Domains

Chapter 5 - Biological Organization

If the generative architecture derived in the preceding chapter expresses a genuine ontological principle, its consequences should become recognizable in the organization of living systems.

Biology provides the first opportunity to examine whether the organizational architecture developed in the previous chapter corresponds to observable reality. Living systems differ profoundly from physical structures because they continuously maintain their organization while simultaneously replacing most of their constituent components. The persistence of life therefore cannot be understood simply as material continuity. It depends upon the continued organization of relationships.

The biological domain is consequently more than an illustration of the Principle of Systematic Exclusion. It provides the first systematic domain in which the explanatory scope of the proposed architecture can be examined.

5.1 Why Biology?

Living systems occupy a unique position among organized systems.
Unlike crystals or other comparatively stable physical structures, organisms continually exchange matter and energy with their surroundings. Molecules are synthesized and degraded. Cells divide, differentiate, and disappear. Organisms develop, reproduce, age, and die. Ecological communities undergo continual changes in species composition and environmental conditions. Despite these continual transformations, biological organization persists.

This observation has occupied biology for more than a century. The persistence of living systems has been explained through metabolism, homeostasis, development, evolution, autopoiesis, ecological interactions, and numerous other biological mechanisms. Each contributes essential insight into particular aspects of living organization.

The question addressed here differs.

> *Can these diverse biological mechanisms be understood as domain-specific realizations of a more general organizational architecture?*

5.2 Biological Organization as Relational Organization

Biological systems are commonly described through their constituent parts.
Genes regulate transcription. Proteins catalyze biochemical reactions. Cells construct tissues. Organs perform physiological functions.
These descriptions explain biological mechanisms with remarkable precision. They do not by themselves explain why these components constitute a living organism rather than an arbitrary collection of biological elements.

Organization resides in the relationships among these components. The persistence of the organism depends upon the continued coordination of metabolic, structural, informational, and ecological interactions (Nicholson, 2019).

- From this perspective, *biological individuality* becomes fundamentally relational.

The organism is not defined primarily by the material components from which it is composed, but by the persistence of the organizational relationships that continuously regenerate those components.

5.3 The Living Cell

The cell provides the simplest comprehensive demonstration of the generative architecture developed in Chapter 4.

The mechanisms responsible for each stage are biological:

Generative Architecture	**Cellular Organization**
Distinction	Intracellular and extracellular domains become distinguishable.
Systematic Exclusion	Only a minute subset of possible biochemical reactions remains compatible with cellular persistence.
Boundary	The plasma membrane establishes a selectively permeable organizational boundary.
Constraint	Membrane transport, metabolic regulation, and intracellular compartmentalization constrain possible interactions.
Selective Persistence	Compatible metabolic pathways are continually maintained while incompatible reactions disappear.
Coherence	Coordinated metabolic activity generates an integrated cellular organization.
Persistent Organization	Cellular organization persists despite continual molecular replacement.
Identity	The cell remains recognizably the same living system.

The underlying organizational sequence corresponds to the generative architecture derived ontologically in Chapter 4.

5.4 Autopoiesis and Structural Coupling

Autopoiesis provides one of the most influential contemporary accounts of biological organization. Living systems continuously regenerate the components that constitute them while maintaining their organizational integrity (Maturana & Varela, 1980).
This conception strongly supports the distinction developed in the previous chapter between material persistence and organizational persistence.

Autopoiesis describes how living systems reproduce their own organization.
Structural coupling extends this insight by emphasizing that organisms and environments continuously co-determine one another through recurrent interaction (Maturana & Varela, 1980). Neither organism nor environment remains organizationally independent. Their continued compatibility emerges through ongoing reciprocal adjustment.

Within this framework, systematic exclusion provides the ontological condition under which autopoietic organization and structural coupling become possible.

- Autopoiesis, as such, explains one biological mechanism through which organizational persistence is realized.

It does not replace the more general organizational architecture derived earlier.

5.5 Evolution as Systematic Exclusion

Evolutionary biology explains *adaptive change* through variation, inheritance, and natural selection (Darwin, 1859; Futuyma & Kirkpatrick, 2017).
Within this framework, natural selection may be interpreted as one biological realization of systematic exclusion.

Environmental conditions continuously eliminate organizational configurations incompatible with continued persistence while selectively favoring those capable of maintaining adaptive compatibility.
Selection therefore operates upon already existing biological variation.

The Principle of Systematic Exclusion addresses a different level of explanation. It concerns the organizational conditions under which any persistent biological organization becomes possible. This distinction between mechanistic explanation and organizational conditions is consistent with Deacon's analysis of constitutive constraints in living systems (Deacon, 2012).

- Evolution and the Principle of Systematic Exclusion address complementary explanatory questions.

5.6 Ecological Organization

Living organisms never exist in isolation. Every organism persists within an ecological context composed of numerous interacting organisms and continuously changing environmental conditions.

Ecological organization extends the relational architecture of individual organisms to larger organizational scales.
Food webs. Nutrient cycles. Mutualistic interactions. Competition. Predation. Symbiosis.
Each contributes to the persistence of ecological organization through continually changing relational structures.
The persistence of ecosystem organization may therefore depend upon the continuity and reorganization of ecological relationships even as species composition changes (Holling, 1973).

- Species composition may change substantially while characteristic ecosystem organization remains recognizable.

5.7 Biological Individuality and Holobionts

The concept of the *biological individual* has become increasingly complex (Clarke, 2010; Pradeu, 2016). Contemporary biology demonstrates that organisms rarely exist as isolated entities. Multicellular organisms develop and persist through continuous interactions with symbiotic microorganisms, microbial communities, and their surrounding environments.

This observation has stimulated renewed interest in concepts such as the *holobiont,* emphasizing that biological persistence frequently depends upon cooperative relationships extending beyond the classical boundaries of the organism (Bordenstein & Theis, 2015; Theis et al., 2016). The concept remains debated, particularly when holobionts are interpreted as coherent units of selection, but it nevertheless illustrates the difficulty of defining biological individuality solely through fixed anatomical boundaries (Douglas & Werren, 2016).

Within this framework, these developments do not alter the generative architecture derived in Chapter 4. *They reinforce it*. The question is no longer whether an organism possesses clearly defined material boundaries, but which organizational relationships remain sufficiently coherent to sustain persistent biological identity.

- Biological individuality emerges as a *relational* property rather than as a purely anatomical one.

Whether the relevant organizational unit consists of a cell, a multicellular organism, or a host-associated community depends upon the organizational relationships that persist through systematic exclusion.

The implications of this relational *concept of biological individuality* are examined in detail in Monograph No. 3.

5.8 Biological Organization Across Scales

The same generative architecture appears repeatedly across biological organization.

Organizational Level	**Mechanisms**	**Organizational Architecture**
Cell	Membrane transport, metabolism	Same
Multicellular organism	Development, physiology	Same
Population	Reproduction, selection	Same
Ecosystem	Ecological interaction	Same

- The mechanisms become progressively more complex. The organizational architecture remains recognizable.

This recurrence constitutes a first cross-scale indication that organizational scale invariance may represent a genuine property of organized biological systems. Comparable hierarchical recurrence has previously been recognized in studies of complex organization (Simon, 1962), although the present framework proposes a specific ontological mechanism underlying this recurrence.

5.9 Adaptive Persistence

Biological persistence should not be interpreted as static stability. Living systems persist because they continuously modify themselves while preserving organizational coherence.

Adaptive persistence extends beyond simple survival. An organism survives only insofar as it remains capable of maintaining organizational compatibility with changing environmental conditions.

- Persistence is consequently an active organizational process rather than a passive state.

The Principle of Systematic Exclusion explains this process as the continual elimination of organizational trajectories incompatible with continued coherence.

5.10 Interim Conclusion

Biology provides the first extensive empirical domain in which the ontological architecture derived in Chapter 4 can be examined.

Cells. Organisms. Populations. Ecosystems. Each realizes different biological mechanisms. Each can nevertheless be interpreted through the same generative sequence linking distinction, exclusion, boundaries, constraints, selective persistence, coherence, persistent organization, and identity.

Within PSE, the recurrence of this architecture across biological scales provides a first basis for investigating the hypothesis that organization may possess domain-independent properties while biological mechanisms remain domain-specific.

The following chapter extends this investigation to cognitive, symbolic, and reflective systems, where organization no longer operates exclusively through material interactions but increasingly through representation, meaning, and symbolic mediation.

The biological examples examined throughout this chapter reveal an increasingly important transition. Living systems do not merely maintain organization through metabolism and development. They also establish species-specific relationships with their surroundings that determine which aspects of the environment acquire biological significance.

This observation forms the natural transition from biological organization to cognitive organization.

Chapter 6 - Cognitive, Symbolic, and Reflective Organization

Biological organization maintains itself through continuous interaction with its environment. Reflective organization introduces a fundamentally new possibility:

> *the construction and preservation of internally organized representations capable of guiding future interaction*.

This transition profoundly extends the possibilities of organization while introducing entirely new forms of instability.

The preceding chapter demonstrated that the generative architecture derived in Chapter 4 recurs throughout biological organization. Reflection introduces a further organizational transition. Organisms no longer respond exclusively to immediate environmental conditions. They increasingly organize internal representations through which experience, expectation, and symbolic structures influence future behaviour.

- The organizational architecture remains unchanged. Its realization becomes progressively more complex.

6.1 From Biological to Cognitive Organization

Every organism interacts selectively with its surroundings. Cognitive organization introduces progressively more complex forms of internal organization through which previous interactions can influence subsequent behaviour.

This transition is gradual. Increasing organizational complexity enables progressively richer forms of internal representation.
These representations do not replace direct interaction with Reality[1]. *They organize it*.

- The emergence of cognition extends biological organization while preserving its relational foundations.

6.2 *Umwelt* and Structural Coupling

The transition from biological to cognitive organization was first explored systematically by *Jakob von Uexküll*. Rather than treating the environment as an objective collection of physical conditions, *von Uexküll* proposed that every organism inhabits its own *Umwelt*: a species-specific world constituted through biologically meaningful interactions (von Uexküll, 1934/2010).

The same physical surroundings therefore give rise to profoundly different experiential worlds. A tick, a bat, and a human inhabit the same physical environment while responding to entirely different organizational distinctions.
From the perspective developed in this monograph, the Umwelt illustrates an important consequence of systematic exclusion.

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[1] Reality - *capital R* - (definition: Monograph No. 1A)

- Every organism continuously excludes the overwhelming majority of possible environmental interactions while selectively preserving those relevant to its continued persistence.

Its experienced world therefore emerges through organization rather than through passive registration of objective reality.

Maturana and Varela later extended this insight through the concept of *structural coupling*, emphasizing that organisms and environments continuously modify one another through recurrent interaction. Together, *Umwelt* and *structural coupling* illustrate how organism and context become reciprocally organized through selective interaction rather than through passive environmental determination (Maturana & Varela, 1980; von Uexküll, 1934/2010).

Neither organism nor environment remains organizationally independent. Persistent organization emerges through the continual maintenance of compatible interactions between both.

Umwelt and structural coupling thus offer complementary perspectives on organism–environment relations: the former emphasizes the organism-specific domain of biological significance, while the latter emphasizes the recurrent organizational dynamics through which organism and environment remain mutually related.

- Together they provide the biological bridge from adaptive organization to cognition.

6.3 Information, Difference, and Bateson

Information is often treated as the transmission of signals or the communication of measurable quantities. Such descriptions successfully characterize important aspects of information, yet they leave open a more fundamental question.

When does a physical difference become meaningful for an organized system?

In 1972, Gregory Bateson proposed a concise answer by defining information as *a difference which makes a difference* (Bateson, 1972). This formulation shifts attention away from information as an intrinsic property of the external world toward information as a relational event occurring within an organized system.

Here, Bateson's insight acquires an ontological interpretation. A difference becomes organizationally informative when it affects the conditions under which organization persists. Systematic exclusion continuously determines which environmental differences become organizationally relevant while innumerable other differences remain without consequence.

- Information is neither contained in the environment nor generated exclusively by the organism. It emerges through the continuous interaction between organized systems and their surroundings.

Different organisms may encounter the same physical event while extracting entirely different information because their organizational structures differ.

As such, information is *relational*. It acquires meaning through the organizational distinctions that a system is capable of maintaining.

Bateson's formulation thus complements the Principle of Systematic Exclusion by emphasizing that organization determines informational significance, while systematic exclusion determines which differences become capable of influencing continued organization.

6.4 Attention and Selective Organization

No organism can process every possible interaction simultaneously.
Attention constitutes the organizational process through which certain interactions become selectively stabilized while others remain irrelevant. Therefore, it represents a direct cognitive expression of systematic exclusion.

Perception necessarily involves selection: only a limited subset of potentially available environmental information becomes incorporated into ongoing cognitive organization.

- Without selective attention, coherent perception could not emerge.

Attention is not merely a psychological phenomenon. It represents an organizational necessity.

6.5 Symbolic Organization

Reflection reaches a new organizational level through the emergence of symbolic systems. Language, mathematics, diagrams, scientific models, legal concepts, and cultural symbols preserve distinctions independently of the situations in which they originally emerged.

- Symbolic organization extends persistence beyond individual biological experience.

Symbols constitute organized systems in their own right. They establish boundaries between meaningful and meaningless expressions. They constrain interpretation. They preserve coherent relational structures. They acquire recognizable identity.

The organizational architecture derived in Chapter 4 remains fully recognizable despite the transition from biological to symbolic organization.

6.6 Language and Shared Worlds

Language transforms individual cognitive organization into collective symbolic organization. Words do not merely designate objects. They organize shared distinctions.
Through language, individual experience becomes communicable, comparable, and socially stabilized.

- Communities develop shared symbolic worlds that persist across generations despite continual replacement of individual participants.

Language thus extends organizational persistence far beyond biological inheritance.

6.7 Symbolic Forms

Ernst Cassirer argued that human beings inhabit symbolic forms through which reality becomes *intelligible* (Cassirer, 1944).
Language, myth, religion, science, art, and *mathematics* each organize experience according to internally coherent symbolic structures.

Within the present framework these symbolic forms may be understood as higher-order organizations generated through the same generative architectural sequence derived earlier.

- The underlying mechanisms differ fundamentally from those operating in biological organization. The organizational logic remains unchanged.

6.8 Science as Reflective Organization

Science constitutes one of the most sophisticated forms of symbolic organization.
Concepts become organized into theories. Theories become organized into research traditions. Research traditions establish methodological boundaries, conceptual constraints, and criteria of coherence.

This organization of scientific knowledge has likewise been analyzed within the philosophy of science as the cumulative development of *research traditions* (Lakatos, 1978). Scientific knowledge therefore develops as an organized relational system, not as a simple accumulation of isolated facts.

- Its persistence depends upon the continued organization of conceptual relationships while individual investigators, techniques, and observations continually change.

6.9 Formal Distinction

George Spencer-Brown placed *the act of drawing a distinction* at the foundation of his formal calculus (Spencer-Brown, 1969). This insight closely parallels the ontological derivation developed in Chapter 4.

Distinction constitutes the first condition under which organized systems become possible. Within this framework, however, distinction represents only the beginning of a longer organizational sequence.

- Systematic exclusion, boundaries, constraints, selective persistence, coherence, persistent organization, and identity progressively emerge from this initial condition.

Spencer-Brown therefore provides a formal precedent for treating distinction as foundational. This framework extends that insight into an ontological architecture.

6.10 The Holoscript

Reflective systems gradually construct internally organized symbolic worlds through which subsequent experience becomes interpreted.

- Within the PSE Research Programme this evolving symbolic organization is described as *the Holoscript*.

The Holoscript is not a collection of beliefs. It is the dynamically organized symbolic architecture through which reflective systems interpret distinctions, establish meaning, preserve coherence, and coordinate future interaction.
It represents the highest level of symbolic organization considered in the present monograph.

Its consequences extend beyond the ontological questions addressed here.

- They become central to the analysis of coherence, congruence, second-order exclusion, and transgression developed in the following volume.

6.11 Comparative Synthesis

The generative architecture derived in Chapter 4 remains recognizable throughout cognitive, symbolic, and reflective organization.

Organizational Level	**Dominant Mechanisms**	**Generative Architecture**
Cognitive organization	Neural processing	Same
Umwelt	Structural coupling	Same
Symbolic organization	Language	Same
Science	Conceptual organization	Same
Holoscript	Reflective integration	Same

The mechanisms become progressively more abstract. The organizational architecture remains stable.

- Reflection extends biological organization while preserving its ontological foundations.

6.12 Interim Conclusion

The emergence of cognition, symbolism, and reflection represents one of the most significant transitions in the evolution of organized systems.
Yet the transition introduces no fundamentally new organizational architecture.

> Distinction → Systematic exclusion → Boundaries → Constraints → Selective persistence → Coherence → Persistent organization → Identity.

Each stage remains recognizable despite profound changes in substrate, mechanism, and complexity.
Reflection provides a second major empirical domain for evaluating the hypothesis that organization exhibits organizational scale invariance.

The following chapter examines this hypothesis directly by comparing the recurrence of the generative architecture across organizational levels.

Part IV. - Organizational Scale Invariance and Relational Ontology

Chapter 7 - Organizational Scale Invariance

> The preceding chapters developed a generative architecture of organization and examined its expression in biological and reflective systems. The remaining question is whether this recurrence reflects a genuine ontological property of organized reality.

7.1 Recurrence Across Organizational Levels

Throughout the preceding chapters the same organizational sequence has appeared repeatedly.

Distinction
↓
Systematic Exclusion
↓
Boundary
↓
Constraint
↓
Selective Persistence
↓
Coherence
↓
Persistent Organization
↓
Identity

The biological mechanisms responsible for this sequence differ fundamentally from those operating in cognition, language, or cultural systems. Yet the organizational relationships remain remarkably similar.

- The recurrence *itself* requires explanation.

7.2 Mechanisms Change, Architecture Persists

Scientific disciplines explain organization through mechanisms appropriate to their own domains. Physics investigates physical interactions. Biology explains metabolism, development, and evolution. Neuroscience examines neural dynamics. The social sciences investigate institutions, communication, and collective behaviour.
Nothing in this argument suggests that these mechanisms should be unified. Their diversity is expected.

What remains striking is that organization repeatedly develops through *comparable organizational relationships* despite profound differences in mechanism.

- The recurrence of the generative architecture appears independent of any single domain-specific mechanism through which it is realized.

7.3 Organizational Scale Invariance

Within the PSE Research Programme this recurring architecture is described as *organizational scale invariance*.

Organizational scale invariance refers to the recurrence of equivalent organizational principles across successive organizational levels, arising from the same generative processes while the mechanisms responsible for their realization remain domain-specific.

It is distinct from conventional scaling relationships. Scaling relationships describe quantitative regularities observed across different scales. Organizational scale invariance concerns the recurrence of an underlying generative organizational architecture across organizational scales.

- *The proposal is ontological.* It concerns the recurrence of generative organizational relationships across scales, independently of the particular quantitative scaling relationships that may be observed within specific systems.

7.4 Organizational Scale Invariance and Complexity

Complexity science has documented recurring quantitative and structural regularities across systems that differ substantially in scale, and has investigated whether such regularities can be explained by common underlying properties or mechanisms (Mitchell, 2009).
Early analyses of hierarchical complexity likewise recognized the recurrence of comparable organizational structures across different levels of organization (Simon, 1962). Related research has identified structural and dynamical regularities in other classes of organized systems.
Network science has revealed recurring network properties across biological, technological, and social systems (Barabási, 2016), while systems biology investigates organization through interacting biological networks and their system-level properties (Kitano, 2002).
Together, these lines of research have expanded scientific understanding of recurring relations and regularities in organized systems.

The concept of Organizational Scale Invariance (OSI) proposed in this framework begins from a related observation while addressing a different question.
Complexity science investigates how organized patterns emerge, interact, and evolve within complex systems (Mitchell, 2009). Its concerns include the dynamics of complex interactions, emergent behaviour, adaptation, and self-organization.

The Principle of Systematic Exclusion addresses a different, explicitly ontological question:

> *Why should comparable organizational architectures recur at all despite being realized through different mechanisms?*

Within the PSE Research Programme, such recurrence is hypothesized to result from a common generative architecture. The sequence

Distinction → Systematic Exclusion → Boundary → Constraint → Selective Persistence → Coherence → Persistent Organization → Identity

is proposed as an ontological architecture describing the organizational conditions under which domain-specific mechanisms can generate and sustain persistent organized systems.

- The distinction is therefore methodological as well as ontological.

Complexity science investigates how complex organization emerges, develops, and behaves through interacting processes. The Principle of Systematic Exclusion investigates the proposed organizational conditions under which persistent organization becomes possible. These perspectives address complementary explanatory questions.

If Organizational Scale Invariance proves to be a genuine property of organized reality, some of the recurring regularities identified in complexity research may become interpretable as different realizations of *a common generative architecture*.

7.5 Comparative Overview

Organizational Level	**Mechanisms**	**Generative Architecture**
Physical organization	Physical interactions	Same
Biological organization	Evolution, metabolism, development	Same
Cognitive organization	Neural processing and information selection	Same
Reflective organization	Symbolic integration and recursive representation	Same
Cultural organization	Communication and institutions	Same

The recurrence of the same organizational architecture despite fundamentally different mechanisms constitutes the central observation developed throughout this work.

7.6 Scientific Implications

If organizational scale invariance proves to be a genuine property of organized systems, several consequences follow.

- Organization may be investigated as a scientific object in its own right, beyond the mechanisms specific to individual domains.
- Conceptual continuity may be established across scientific disciplines without reducing one domain to another.
- Domain-specific theories remain fully valid while becoming components of a broader ontological framework.

Future investigations may therefore examine organization itself as a primary explanatory category.

7.7 Transition to the Next Monograph

The present analysis has focused upon the emergence and persistence of organization. Reflective systems introduce an additional possibility. They preserve internally coherent symbolic organizations capable of becoming progressively independent of the contextual conditions from which they originally emerged.

Understanding this transition requires extending the concept of coherence and introducing additional concepts, including congruence, second-order exclusion, and transgression.

These concepts are developed in Monograph No. 4, *Reflective Organization and Transgression*. Monograph No. 3 first extends the organizational framework developed here to the problem of *biological individuality*.

Chapter 8 - Toward a Relational Ontology of Organization

> The preceding chapters developed the Principle of Systematic Exclusion as a generative organizational principle and examined its recurrence across multiple organizational levels. The remaining question concerns its ontological significance.

8.1 Organization as a Primary Ontological Category

Scientific inquiry has traditionally focused upon the properties of objects, substances, or processes. The preceding analysis suggests a different perspective.

Organization itself may constitute a primary ontological category. Objects exist as organized systems. Functions exist through organized relationships. Persistence depends upon organized continuity. Identity emerges from organized coherence.

From this perspective, organization constitutes the condition under which persistent entities become distinguishable and maintain continuity through time.

8.2 A Relational Ontology

If persistent entities are constituted through organization, relationships acquire ontological priority within the framework developed here.

Systems are not defined primarily by the intrinsic properties of their constituent components. They are defined by the organization of the relationships that continuously maintain their coherence and persistence.
A relational ontology recognizes the existence of material components while proposing that the persistence and identity of organized systems depend upon the organization of their relationships.

Different material substrates may realize comparable organizational architectures.

- The relationships persist. The components continually change.

8.3 Organization Without Reduction

The Principle of Systematic Exclusion does not seek to reduce biology to physics, cognition to biology, or society to psychology. Each organizational level possesses mechanisms appropriate to its own domain. This interpretation is consistent with Lakatos' conception of complementary research programmes addressing different explanatory questions (Lakatos, 1978).

Reduction alone does not provide a sufficient general strategy for understanding organized systems. The recurring architecture developed throughout this work suggests another possibility. Different scientific disciplines may therefore be understood as investigating domain-specific realizations of a common generative organizational principle.

- Their explanatory autonomy remains intact. Their conceptual relationships become more transparent.

8.4 Consequences for Scientific Inquiry

Understanding organization as a primary ontological category changes the role of interdisciplinary research. Instead of transferring concepts from one discipline to another, investigators may compare the organizational architectures underlying apparently different phenomena.

Such comparisons do not assume identical mechanisms. They examine whether similar organizational relationships recur despite differences in physical realization.

- Organizational scale invariance therefore becomes a comparative research strategy as well as an ontological hypothesis.

8.5 The Architecture Reconsidered

The argument developed throughout this monograph may be summarized as a single generative sequence.

Reality
↓
Context
↓
Distinction
↓
Systematic Exclusion
↓
Boundary
↓
Constraint
↓
Selective Persistence
↓
Coherence
↓
Persistent Organization
↓
Identity

This sequence expresses the ontological and organizational dependencies developed throughout this monograph; it is not a domain-specific model. Its validity ultimately depends upon continued examination across increasingly diverse scientific domains.

The following monographs extend that examination (Monographs No.3 -10).

8.6 Looking Ahead

The analysis presented here has concentrated upon the emergence and persistence of organized systems.

Reflective systems introduce a qualitatively new possibility. They construct symbolic organizations capable of maintaining internal coherence independently of the changing contexts from which they originally emerged.
This development fundamentally alters the dynamics of organization.

- It enables scientific reasoning, language, mathematics, culture, and technology. It also creates the conditions under which coherence and contextual congruence may gradually diverge.

Understanding this transition requires concepts extending beyond the ontological framework developed here.
Monograph No. 4 therefore examines reflective organization through the concepts of coherence, congruence, second-order exclusion, and transgression.

Before that transition, Monograph No. 3 extends the relational ontology developed here to the problem of biological individuality.

Epilogue

The search for general principles capable of explaining organization across different domains has a long tradition in science and systems thinking. The diversity of mechanisms discovered across physics, biology, cognition, and the social sciences has greatly expanded our understanding of organized systems, while also revealing the difficulty of comparing organization across disciplinary boundaries.

The Principle of Systematic Exclusion is proposed as the PSE Research Programme's contribution to that continuing search. Its scientific significance ultimately depends upon whether the generative architecture developed here continues to prove recognizable as increasingly diverse domains of organization are investigated.

If so, organization itself may become a fundamental object of scientific investigation, comparable in generality to energy, information, or evolution. The proposed framework complements these concepts by providing a common ontological basis for understanding their organizational relationships.

Monograph-Specific Glossary

Note to the Reader

The canonical terminology of the PSE Research Programme is defined in Monograph No. 1A – Canonical Glossary and Conceptual Dependency Map. The present glossary contains only concepts that are introduced, substantially extended, or employed in a specialized sense in this volume. Unless explicitly indicated otherwise, all foundational concepts retain the canonical definitions established in Monograph No. 1A.

Domain-Specific Mechanism

Definition

The particular physical, biological, cognitive, chemical, social, or symbolic processes through which organization is realized within a given scientific domain.

Domain-specific mechanisms differ across disciplines, while the underlying generative organizational architecture is proposed to remain invariant.

Cross-reference

See also:

* Organizational Scale Invariance
* Generative Architecture of Organization

Generative Architecture of Organization

Definition

The ordered sequence of organizational conditions through which persistent organization emerges.

In the PSE Research Programme, this architecture represents the central ontological contribution of Monograph No. 2. It provides a generative framework for analyzing how organized systems arise, persist, and develop across different scientific domains.

The architecture is developed in detail in Chapter 4 of this monograph. Its foundational concepts and conceptual dependency relations are defined in Monograph No. 1A – Canonical Glossary and Conceptual Dependency Map.

Cross-reference

See also:

* Organization (Monograph No. 1A)
* Context (Monograph No. 1A)
* Distinction (Monograph No. 1A)
* Systematic Exclusion (Monograph No. 1A)
* Constraint (Monograph No. 1A)
* Persistence (Monograph No. 1A)

Organizational Scale Invariance

Definition

Organizational Scale Invariance is the recurrence of equivalent organizational principles across different organizational scales, arising from the same generative processes while the mechanisms responsible for their realization remain domain-specific.

Within Monograph No. 2, this concept is developed specifically in relation to the Generative Architecture of Organization. Equivalent organizational principles may therefore recur across domains that differ in substrate, scale, mechanism, and scientific discipline without implying identical structures or mechanisms.
Within the PSE Research Programme, Organizational Scale Invariance functions as a research hypothesis whose explanatory value depends upon continued investigation across multiple scientific domains.

Cross-reference

See also:

* Organizational Scale Invariance (Monograph No. 1A)
* Domain-Specific Mechanism (this monograph)
* Generative Architecture of Organization (this monograph)

Relational Ontology (specialized use)

Definition

Within Monograph No. 2, relational ontology refers specifically to the ontological interpretation of organized systems as persistent organizations of relations whose identity is maintained through organizational continuity rather than through the permanence of constituent material components.

The general programme definition of Relational Ontology is provided in Monograph No. 1A. The present definition specifies its application within the ontological framework developed in Monograph No. 2.

Cross-reference

See also:

* Relational Ontology (Monograph No. 1A)
* Organization (Monograph No. 1A)
* Persistence (Monograph No. 1A)

Scope

This glossary intentionally excludes foundational concepts that are already defined in Monograph No. 1A – Canonical Glossary and Conceptual Dependency Map.
Those canonical definitions remain normative throughout the PSE Research Programme.

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