

A Generative Architecture of Conscious Experience

Avishag Deborah Pelosi

Abstract

Every conscious experience has form, unfolds in time, and matters from within. Despite advances in theories of consciousness, central questions remain: how is felt meaning related to the dynamic organization of experience, how can this relation be formalized, and what might it suggest about the experience and development of agency?

This theoretical paper proposes a model of conscious experience in which structure, process, and meaning are inseparable aspects of a generative unity. This unity is intrinsically oriented toward articulation through five primitive operations: constraint, differentiation, permutation, valuation, and transformation. Their combinations yield thirty-two canonical configurations, providing a finite formal representation of organized possibilities. The framework distinguishes this formal organization from its experiential realization. Through recursive projection within embodied systems shaped by their histories, these configurations are realized as a spatially and temporally organized field in which possibilities carry differential felt significance. Conscious experience is understood as the lived traversal of this field. Integration preserves coherence and continuity, while agency is defined as the capacity of an embodied system to participate in orienting what follows.

By formally relating experiential structure, temporal development, and felt meaning, the framework lays the foundation for mechanistic accounts and empirical research into the subjective experience and development of agency, its constraints, and its potential expansion through psychological transformation.

Keywords Subjective experience, Agency, Meaning, Generative organization, Consciousness, Formal modeling

1. Introduction

This is an invitation.

To invite is to open a space; to be invited is to discover oneself within it. An invitation extends, and in its extension a direction appears: what was indifferent becomes relevant, relations begin to take form, and a response is called forth. A future is not yet present but already shared in possibility.

In such moments, structure, process and meaning do not stand apart. They arise together within a field in which possibilities are inherently oriented, defined not only by what can occur, but by what matters. Consciousness, in this initial phenomenological sense, is lived participation within a structured and dynamic field of meaningful possibilities.

As soon as the invitation is encountered, a specific organization comes into being. A space is opened and thereby constrained: something can occur, but not in every possible way. Within this opening, distinctions emerge. What was previously continuous separates into possibilities that may be taken up or left aside. These possibilities shift and recombine, forming a changing field of relations. Differences in relevance also appear. Some possibilities acquire weight, orienting attention and response, while others recede into the background. From within this structured and weighted field, a response becomes possible that may transform both the field and the one who acts within it.

These movements — the opening of a space, the emergence of distinctions, the recombination of possibilities, the differentiation of relevance, and transformative response — provide a phenomenological entry point into recurrent forms of articulation that the theory subsequently defines more systematically.

Contemporary theories of consciousness variously emphasize functional organization, intrinsic causal structure, inference, embodiment, intentionality, or phenomenological relations. What remains difficult is to relate formal organization to felt significance (how experience matters from within) in a way that can be theoretically expressed and empirically investigated. This is a psychological as well as philosophical question, bearing on first-person perspective, choice, and agency. The present framework approaches it by treating structure, process, and meaning as inseparable within a generative unity. Following a selective review, the paper develops this proposal by defining five primitive operations, formalizing their combinations, and examining how

the resulting organization is realized as embodied experience. It thereby provides a model for relating felt meaning to the dynamic organization of experience and a basis for the subsequent study of agency.

2. Dimensions of Conscious Experience

Rather than offering a comprehensive survey, the following review situates the proposed framework within contemporary work on the organization of consciousness, embodied meaning, formal approaches to experience, and proposals concerning the emergence of experienced reality.

2.1 The structure of experience

What gives experience its organization? Contemporary theories locate this organization at different explanatory levels. Global Workspace theories emphasize functional organization: mental content becomes conscious when it is made broadly available to systems involved in perception, memory, attention, and action (Dehaene & Naccache, 2001; Mashour et al., 2020). Integrated Information Theory (IIT), by contrast, identifies consciousness with the irreducible cause–effect structure specified intrinsically by a system (Oizumi et al., 2014; Tononi, 2008). Predictive processing describes perception and cognition through hierarchically organized processes of prediction and inferential updating, while active inference extends this organization to action and the regulation of organism–environment relations (Clark, 2013; Friston, 2010).

These approaches characterize functional availability, intrinsic causal structure, and dynamic inference. Nevertheless, accounts of cognitive organization may leave unresolved how that organization is lived subjectively (Levine, 1983; Nagel, 1974). Chalmers (1995) distinguishes the explanation of cognitive functions from the problem of phenomenal experience and argues that a nonreductive theory requires psychophysical principles connecting physical processes with experience.

The challenge is therefore to relate formal organization to experience as lived. The present framework approaches this relation by treating structure, process, and meaning as inseparable.

2.2 Meaning and embodiment

How is meaning constituted within experience? Phenomenological traditions treat meaning as intrinsic to lived experience rather than as an interpretation imposed upon otherwise neutral processes, emphasizing intentionality and the organization of experience from within (Husserl, 1980; Merleau-Ponty & Landes, 2013). Enactive and neurophenomenological approaches develop this view through embodied sense-making, in which organism and world co-emerge relationally (Varela et al., 1991; Thompson, 2004; De Jaegher & Di Paolo, 2007). Bringing phenomenological analysis into psychological theory, Lundh and Foster (2024) describe embodiment as a first-person synthesis of having a body as an object and being a body as felt from within, relating this synthesis to self-identity and mental health.

Deacon (2011) approaches meaning through the relation between constraint and biological organization. He argues that function and end-directed organization arise when networks of constraints, including excluded possibilities, become recursively organized within self-maintaining systems thereby grounding value and significance in the organization of the system.

A complementary computational approach examines how semantic organization can emerge across timescales. Dale and Kello (2018) show how recurrent dynamics can reflect words and topics from sequences of sounds, with word processing shaped by broader context. They identify dynamic memory and integration across timescales and modalities as conditions for sense-making. The meaning demonstrated computationally, however, is context-sensitive organization that supports prediction rather than significance felt by the system. Their account therefore leaves open how semantic organization comes to matter from within.

Affective theories address more directly how circumstances come to matter for a subject. Lambie (2020) describes emotion as shaping how the world itself is experienced: situations appear inviting, threatening, or devoid of possibilities in relation to the subject's concerns and readiness for action. His account connects felt significance, first-person perspective, and possibilities for action. From an enactive perspective, affectivity is intrinsic to embodied sense-making (Colombetti, 2014). Both connect felt significance to the organization of experience and the possibilities for action encountered by the subject.

Across these approaches, meaning takes the form of intentional content, biological relevance, semantic organization, affective value, or action-guiding significance. The present framework defines it more generally as intrinsic orientation within a differentiated field: how a possibility matters to the field's ongoing realization. The framework later distinguishes its experiential and historical expressions.

2.3 Formalizing experience

Can subjective experience, including its meaningful character, be described formally?

Several approaches represent particular dimensions of experiential or causal organization mathematically. IIT provides one of the most developed examples, identifying experience with the intrinsic causal structure specified by a system (Albantakis et al., 2023). Kleiner (2020) develops a formal framework for mapping physical systems to structured spaces of experience, making the mappings assumed by consciousness theories available to mathematical analysis.

Compositional approaches examine how differentiated processes combine into unified organization. Drawing on Yogācāra philosophy, Signorelli et al. (2021) propose that eight interdependent modes of consciousness arise through the composition of more fundamental conscious processes. Arsiwalla (2024) approaches consciousness as fundamentally semantic and examines meaning through relational mappings between structured representational spaces. These approaches make composition and relations among representations explicit formal objects.

Other models formalize the internal and perspectival organization of experience. Prentner (2019) describes phenomenal objects as arising through relations of connection, boundary, and partition within a structured phenomenal space. The Projective Consciousness Model uses projective geometry and active inference to represent a conscious field organized from a first-person perspective, integrating spatial experience with perception, imagination, affect, and action according to organism-relative relevance (Rudrauf et al., 2017; Williford et al., 2018).

Affective organization has also been approached computationally. Hesp et al. (2021) formalize valence in relation to confidence and action selection, although the relation between functional valence and felt affect remains insufficiently explained.

Collectively, these approaches formalize causal distinctions, relational mappings, compositional structures, perspectival organization, and affective valuation. These dimensions, however, are generally treated separately, and their relation within subjective experience remains insufficiently articulated. The present theory addresses this problem through a generative architecture intended to relate structural organization, dynamic articulation, and intrinsic significance.

2.4 Meaning and agency

The relation between meaningful experience and agency concerns how what matters to a subject participates in orienting what follows. Psychological accounts emphasize intentional influence through forethought and self-regulation (Bandura, 2001), while the sense of agency refers to the experience of controlling one's actions and their effects (Haggard, 2017). At a minimal level, agency requires active regulation of interaction according to norms arising from the agent's organization (Barandiaran et al., 2009). These accounts suggest that agency involves participating in change in relation to what matters to the agent. The present framework asks whether its account of meaningful experiential organization can clarify how felt significance contributes to evaluating possibilities, orienting subsequent realization, and enacting change.

2.5 Generativity and experiential appearance

Generativity appears in contemporary approaches in different senses. In predictive processing and active inference, a generative model represents how hidden causes produce sensory consequences, enabling a system to interpret, predict, and act within its environment (Friston, 2010; Linson et al., 2018). Beyond probabilistic modeling, enactive theory describes cognition as the enactment of a meaningful world through the ongoing self-organizing activity of embodied living (Thompson, 2004; Varela et al., 1991). More recently, Laukkonen et al. (2025) extend model-based generativity to consciousness, proposing that a coherent experiential world is constructed through hierarchical and recursively integrated inference.

In the present framework, generativity is rooted in an intrinsic tendency toward articulation, through which possibilities arise and become organized. This raises a

further question: *how is such generative organization related to the world as it is experienced?*

A formal description may begin with relations found within experience, but the present framework asks whether the spatial, temporal, and meaningful organization of experience is the situated realization of a generative dimension that is not itself experiential in the same form. This requires distinguishing two dimensions. The generative dimension specifies possible configurations and relations among the operations constituting them. The experiential dimension concerns how these configurations become lived within embodied systems shaped by their histories.

The possibility that experienced reality reflects a deeper level of structural organization recurs across several philosophical, contemplative, and mystical traditions, such as Neoplatonic and Hermetic thought (Copenhaver, 1992; Plotinus, 1991; Proclus, 1963), Kabbalistic and Sufi metaphysics (Scholem, 1987, Chittick, 1989), and Eastern cosmological and non-dual philosophies (Girardot, 1983; Lawrence, 1999). Despite their substantial differences, these accounts variously portray multiplicity as proceeding from, manifesting, or remaining grounded in a more fundamental unity.

A particularly explicit contemporary proposal is Hoffman's interface theory (2015), which treats perceived reality as an adaptive interface rather than a direct representation of fundamental reality. The conscious-agent framework develops this proposal formally, describing perceived objects and spacetime as emerging from relational dynamics among conscious agents (Hoffman & Prakash, 2014).

The present framework likewise defines experienced space and time as derived but proposes a finite generative architecture rather than beginning from evolutionary fitness or interactions among conscious agents.

Taken together, these approaches show that consciousness involves organized structure, embodied significance, generative activity, and relations that may be formally represented. The present framework asks whether these dimensions can be related within a unified generative account of meaningful experience. The following sections introduce its primitive operations, formal configuration space, experiential realization, and implications for agency.

3. Foundations of Generative Articulation

The present framework begins from the premise of a generative unity intrinsically oriented toward articulation. Generativity denotes the emergence of articulated organization from this implicit unity. Articulation renders distinctions and relations explicit while preserving their belonging within a whole. This conception aligns with Whitehead's process-oriented emphasis on becoming (Whitehead, 1978) and with Prentner's (2019) mathematical account of phenomenal objects as arising through mereological and topological differentiations within experiential unity. The framework asks what minimal generative organization enables this articulation.

3.1 Triadic generative unity

At the heart of the present framework lies a fundamentally triadic generative unity, with structure, process, and meaning as its inseparable aspects. This postulate is motivated phenomenologically by the observation that conscious experience has organized form, unfolds through lived change, and carries significance. These aspects are not treated as independent substances or explanatory modules, but as simultaneous dimensions of the same generative activity:

Structure is the formation and maintenance of distinctions and relations.

Process is the articulation through which relations emerge, interact, and transform.

Meaning is the orientation through which differentiated possibilities acquire significance and direction.

Structure provides coherence, process provides articulation, and meaning provides orientation. None is sufficient in isolation.

3.2 Delimitation and polarity

The intrinsic orientation toward articulation underlying the triadic organization assumes its first determinate form as a self-delimitation within the generative unity. This foundational constraint opens a bounded locus of articulation within unity itself. Within this locus, differentiation gives rise to distinct positions, while directionality renders them non-equivalent within a common relation. Polarity is the first articulated

manifestation of this asymmetry: two contrasting, interdependent poles emerge together with the oriented relation that both distinguishes and connects them. Like the unity from which it arises, polarity is inseparably structured, processual, and meaningful.

At this level of articulation, process and directionality are not yet temporal succession. They denote the inherent tendency of generative activity toward articulation and constitute its internal ordering from less to more articulated organization and among non-equivalent potentialities.

3.3 Five operations of articulation

The purpose of the present construction is to generate a finite configuration space capable of representing structured, dynamic, and meaningful possibilities. A possibility space as such requires little beyond distinguishable possibilities. These can arise through the same operations involved in the primordial act of self-articulation described above: constraint, which delimits a domain, and differentiation, which establishes distinct terms and relations within it. To generate alternative configurations rather than plurality alone, the differentiated terms must admit different combinations and relational arrangements through permutation. Although every configuration is intrinsically meaningful, oriented navigation within the field requires relational valuation, through which configurations acquire differential significance in relation to one another. Likewise, although the field is inherently processual, process alone does not specify qualitative change; transformation enables configurations to be reconstituted rather than merely rearranged. The framework formalizes these five modes of articulation as constraint, differentiation, permutation, valuation, and transformation. The operations are neither external mechanisms nor successive stages, but interdependent functional distinctions within generative articulation. Their designation as primitive indicates that the theory does not decompose them further. As expressions of the triadic unity, each operation is inseparably structured, processual, and meaningful.

This fivefold vocabulary draws inspiration from *Sefer Yetzirah* (the Book of Formation), an early Jewish esoteric and cosmological text traditionally attributed to the patriarch Abraham although its historical authorship remains unknown (Kaplan, 1997). The work describes formation through thirty-two “wondrous paths of wisdom”:

ten primordial numerical dimensions and the twenty-two foundational letters of the Hebrew alphabet. In its account of the letters, “engraving”, “carving”, “permutation”, “weighing”, and “transformation” are presented as the actions through which existing and possible things are formed. The present framework reconstructs the generative logic of these actions within a formal model.

Constraint

Constraint is the delimitation through which the field opens and stabilizes an internal locus of articulation. By restricting what may occur within a domain, it establishes the conditions within which distinctions and relations can emerge and persist, thereby shaping the possibilities available for further articulation.

Differentiation

Differentiation establishes distinguishable determinations within a delimited domain. Unlike constraint, which opens and bounds a field of admissibility, differentiation articulates contrasts within that field. It makes multiplicity, identity, boundary, and comparison possible.

Permutation

Permutation recombines differentiated elements into alternative relations, sequences, and configurations. It changes how the elements are organized while preserving their distinctions, thereby introducing relational variability without transforming the elements themselves.

Valuation

Valuation renders distinguishable possibilities within the configuration space non-equivalent in significance. It thereby expresses intrinsic orientation as differential relevance.

Transformation

Transformation enables determinations and configurations to change. It is distinct from permutation because recombination may preserve the identities and organizing conditions of what is rearranged, whereas transformation may alter those identities, conditions, or capacities themselves.

The operations are distinguished by their functions, allowing each to define one axis of the formal configuration space they jointly generate. Their formal distinguishability supports combinatorial representation, while the operations remain interdependent in their expression. The resulting configurations constitute alternative modes of articulation connected by multiple possible pathways through the formal space.

4. A compact formal backbone

The formal construction represents each canonical configuration as a sequence of five binary values, with one position assigned to each operation. Let

$$\mathcal{C} = \{0,1\}^5 \quad (1)$$

denote the set of binary 5-tuples representing canonical configurations. For each configuration, the coordinates correspond, respectively, to constraint, differentiation, permutation, valuation, and transformation. Because each of the five coordinates has two possible values, the construction yields thirty-two distinct combinations. Thus,

$$|\mathcal{C}| = 2^5 = 32 \quad (2)$$

In the binary coding, each coordinate describes the mode of expression of one operation within a canonical configuration. A value of 0 denotes latent or backgrounded expression, whereas a value of 1 denotes explicit or foregrounded expression. A backgrounded operation may still condition the configuration without being explicitly articulated within it. All five operations remain constitutive possibilities of the generative field; configurations differ in their patterns of foregrounding. Each binary 5-tuple therefore defines an idealized expression profile, and the thirty-two combinations represent canonical modes through which the formal space is articulated. Intermediate and graded expressions remain possible but are not represented by the binary construction. Its discreteness is thus a property of the formalization, not an ultimate partitioning of the generative unity.

The same configuration space can be represented as a five-dimensional hypercube when profiles differing in one coordinate are treated as adjacent, or as a Boolean lattice when ordered by inclusion of foregrounded operations. The hypercube emphasizes coordinate-wise variation, whereas the lattice emphasizes inclusion.

These relations are combinatorial rather than dynamical. Adjacency does not determine whether a transition occurs or is causally feasible, and distinct coordinates do not imply causal or phenomenological independence.

At this stage, the configurations specify formal possibilities rather than particular experiences or psychological states. Their psychological significance depends on how they are realized within embodied, historically constituted systems, as developed through the account of projection.

5. Projection as Constrained Realization

The configuration space defines possible modes and relations, but a space of possibilities is not yet a lived world. A historically situated system cannot realize every configuration and relation simultaneously. It must constrain, coordinate, and sustain a locally available organization. The theory uses projection to name the rendering of a structured subset of possibilities into a coherent field of experience.

Let S denote a historically stabilized embodied organization arising within the projected field. At a given time t , $c_t \in \mathcal{C}$ denotes the operational configuration relevant to the current realization and e_t the experiential organization presently realized. Let h_t denote the system's historically retained organization: the continuing effects of prior realizations embodied in its constraints, dispositions, sensitivities, valuations, bodily organization, and accessible transitions. These retained effects condition how the current configuration is realized, according to the following schematic relation:

$$e_t = \Phi_S(c_t, h_t) \quad (3)$$

Here Φ_S denotes a realization map indexed to the historically constituted embodied organization S . It represents the localized articulation of the generative unity as experience under the constraints of S and its retained history. The framework terms this constrained and localized realization projection. The notation does not specify whether projection is ultimately implemented through a geometric, dynamical, computational, biological, or other mechanism. It expresses the theoretical claim that experiential

realization depends jointly on formal configuration, retained history, and the organization of the embodied system.

Projection is expected to be many-to-one and relation-selective. Different configurations or retained histories may support phenomenologically similar realizations, while similar configurations may be realized differently by systems with different organizations or histories. Some formal relations may be preserved, others compressed, and still others rendered inseparable in experience. Different kinds of relation, such as adjacency, partial ordering, and accessible transition, are not assumed to have equivalent phenomenal expressions. A later mathematical model must therefore specify which relations are preserved, transformed, or lost under realization.

The five operations belong both to the generative organization and to its realized expression. At the formal level, they define canonical modes and relations; within the projected field, they are enacted as coordinated processes through which experience and activity unfold. The operations specify how articulation occurs, whereas structure, process, and meaning characterize the inseparable constitution of every articulation. Under projection, these triadic aspects become phenomenologically differentiated without becoming independent. Structure contributes to the stabilization of distinctions and spatial relations; process contributes to transition and temporal succession; and meaning is lived as orientation and significance. Spatiality is itself temporally and meaningfully organized, just as temporality and meaning depend on structured differentiation. Projection therefore renders the triadic organization distinguishable within experience while preserving its underlying unity. Space, time, and meaning may then represent modes through which the generative structure becomes available within experience.

On this account, projection is the process through which the generative unity becomes locally differentiated as an embodied organism–world relation. The organism and its environment arise as distinguishable poles within this relation while remaining expressions of a common generative organization. Projection generates a localized sensory and perceptual organization that selectively renders relations within the projected field experientially available.

Projection becomes recursive when the organization it produces participates in conditioning further realization. Once an embodied organism-world relation has been

established, its boundaries, sensory and sensorimotor capacities, and prior realizations constrain which configurations and relations can subsequently become accessible and how they are experienced. Each realization therefore occurs through an organization partly shaped by preceding realizations. The resulting organism-world organization is thus both generated through projection and active within its continuation: a localized expression of generative unity through which that unity becomes differentially accessible to itself. Figure 1 schematically presents the foundational generative architecture and introduces this recursive character of realization. The historical organization through which this recursive conditioning occurs is formalized in the following section.

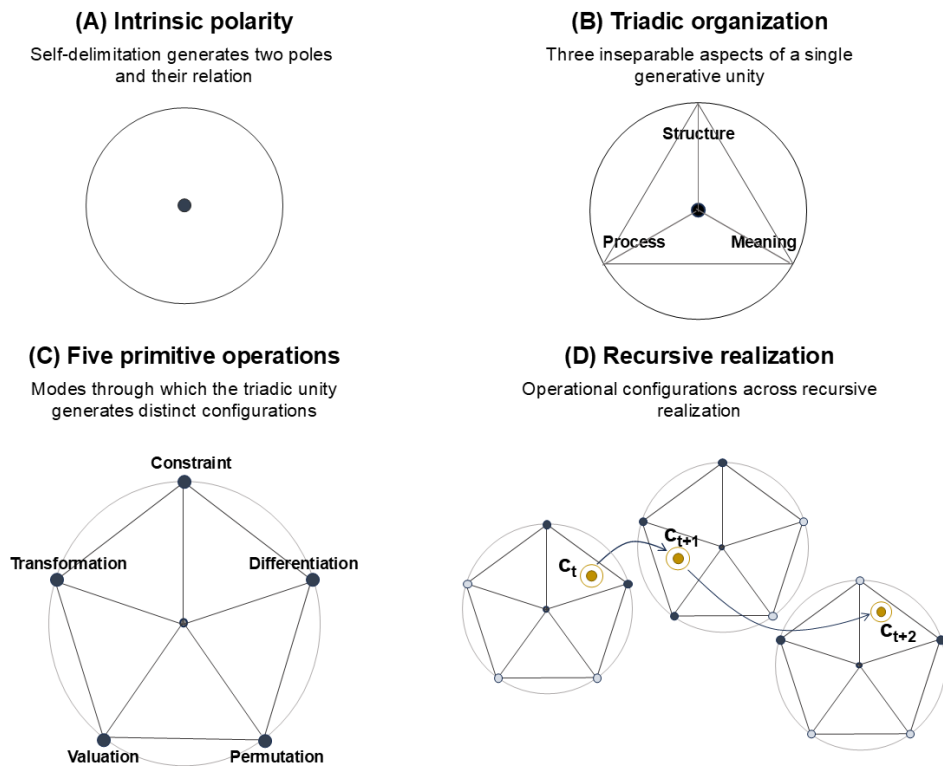


Figure 1. Generative architecture and recursive realization. (A) Self-delimitation establishes intrinsic polarity and relation. (B) Structure, process, and meaning form inseparable aspects of a single generative unity. (C) Five primitive operations generate distinct configurations; the center represents their shared unity. (D) Operational configurations across recursive realization. Dark and light nodes indicate foregrounded and backgrounded operations, gold markers indicate configurations, and arrows show their recursive continuation.

6. Recursive Integration, Temporality, Memory, and Meaning

Projection realizes operational configurations as embodied experiential organizations. For such a realization to constitute a coherent field, its differentiated operations, relations, and orientations must be coordinated without losing their distinctions. The theory terms this capacity integration. Integration is a system-level property through which the activities of constraint, differentiation, permutation, valuation, and transformation are held together within a unified experiential organization. It also allows a system to undergo differentiation and transformation while preserving sufficient coherence for successive realizations to belong to the same ongoing experiential organization. Integration thus has two foundational roles: it coordinates differentiated activity within each realization and sustains continuity across successive realizations. The present account specifies these minimal organizational functions. Further work will distinguish forms and degrees of integration, including affective integration, and examine how they reorganize the field of accessible possibilities and the scope of agency.

Within recursive projection, integration extends across successive realizations. Each realized articulation leaves a trace as the effects of its enacted organization and experiential significance are incorporated into the system, altering the conditions of subsequent realization. Recursive integration thus gives experience a historically accumulated organization, introducing path dependence, learning, and memory, and establishing the conditions for development. This historical update may be represented schematically as:

$$h_{t+1} = U_S(h_t, c_t, e_t) \quad (4)$$

Here, U_S denotes the system-indexed update rule through which retained organization h_t , the currently enacted operational configuration c_t , and its experiential realization e_t jointly determine the organization retained into the next realization, h_{t+1} . The update U_S may involve changes in constraints, dispositions, sensitivities, valuations, bodily organization, or accessible transitions; it represents the system-level retention and reorganization produced through the integrated activity of the five operations; its specific mechanisms remain to be developed in a future model.

Historically retained organization conditions not only how a configuration is experientially realized, but also which operational configurations become accessible

and which configuration is selected for subsequent realization. This relation may be represented schematically by a system-indexed transition rule T_S :

$$c_{t+1} = T_S(c_t, h_{t+1}, e_t) \quad (5)$$

The resulting configuration is experientially realized through the updated retained organization and configuration:

$$e_{t+1} = \Phi_S(c_{t+1}, h_{t+1}) \quad (6)$$

The three relations distinguish complementary aspects of recursive integration: U_S reorganizes what is historically retained, T_S governs the transition among operational configurations, and Φ_S expresses how a configuration is experientially realized within the embodied system.

Recursive integration does more than preserve continuity across successive realizations. Because each realization modifies the retained organization that conditions later projection, it progressively reorganizes the system's effective landscape of possibilities. The canonical configuration space may remain formally invariant, while the accessibility, weighting, and significance of its configurations and transitions change across history. Recursion therefore makes developmental reorganization possible.

The system may return to the same canonical configuration after an interval k while carrying a different retained organization:

$$c_{t+k} = c_t, \quad h_{t+k} \neq h_t \quad (7)$$

Consequently, the recurrent configuration may be experientially realized differently:

$$\Phi_S(c_t, h_{t+k}) \neq \Phi_S(c_t, h_t), \quad \text{in general} \quad (8)$$

Viewed only within the canonical configuration space, such a trajectory may appear cyclic. Within the extended organization of configuration and retained history, however, it does not return to the same state. This suggests a preliminary conception of a developmental spiral: recurrence at the level of formal configuration together with cumulative transformation at the level of historically integrated realization.

Figure 2 summarizes the relation between configuration, projection, and historically integrated realization.

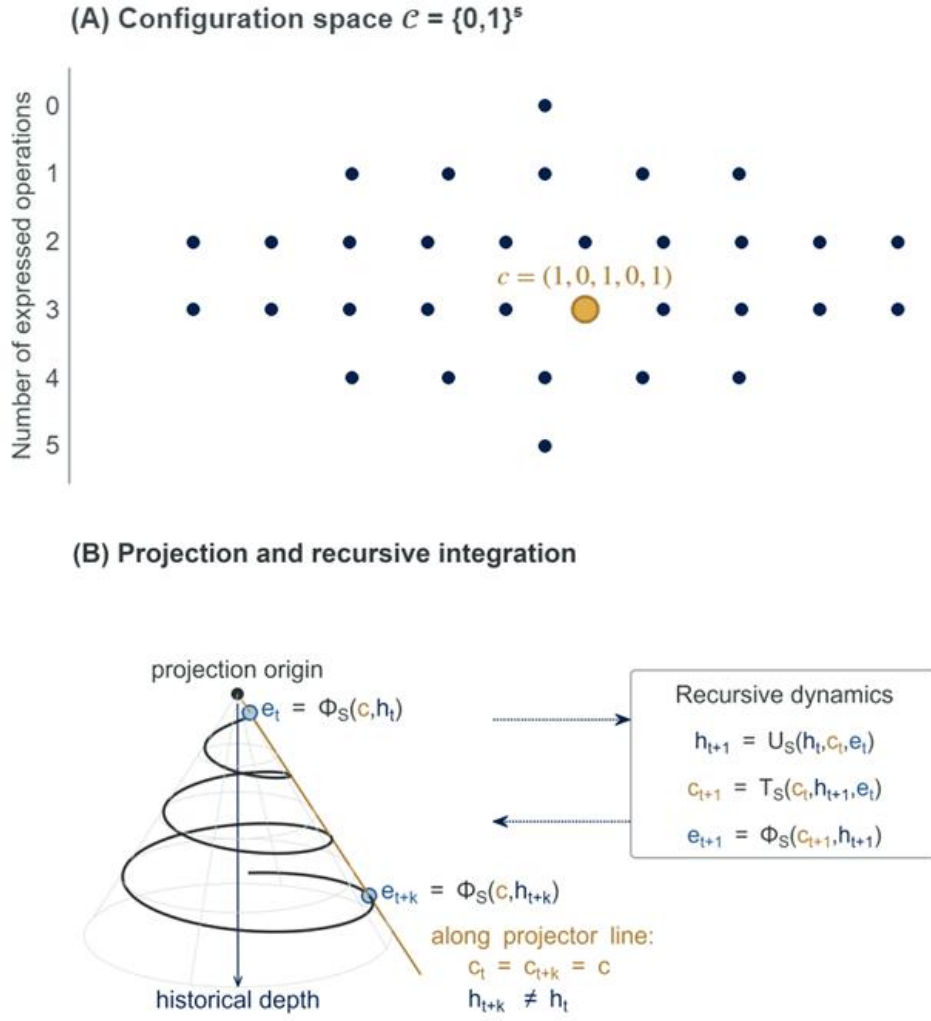


Figure 2. Configuration space, projection, and recursive integration. (A) The thirty-two configurations in $\mathcal{C} = \{0,1\}^5$, organized by number of expressed operations; an illustrative configuration, $c(1,0,1,0,1)$, is highlighted. (B) Schematic representation of projection and recursive integration, showing historical updating U_S , configuration transition T_S , and experiential realization Φ_S . The conical helix represents historical recurrence and cumulative differentiation. A configuration may recur with a different retained organization: $c_{t+k} = c_t = c$ while $h_{t+k} \neq h_t$.

This account clarifies the theory's claim about time. The generative organization contains directionality and relations of ordering but not yet lived succession. Projection renders these relations as locally enacted before-and-after, while recursive integration gives succession continuity, memory, and historical depth by allowing the effects of

prior articulations to remain operative within subsequent realization. Time, in the phenomenological sense relevant here, is the lived continuity of directional change within an integrated history.

Meaning appears at several levels. Intrinsic orientation belongs to the generative organization. Valuation differentiates relevance among articulated configurations and is enacted within the projected field together with the other operations. Experiential meaning is the felt significance of a possibility within the projected field. Historical meaning arises when the effects of prior valuations and transformations remain active within present organization, allowing significance to accumulate and be reshaped across experience.

Integration thereby connects these forms of meaning with temporality and memory. Within each realization, it coordinates valuation with the other operations, allowing differential relevance to be lived as felt significance within a coherent experiential field. Across realizations, it preserves relations through change: temporal continuity depends on this preservation; memory is the continuing efficacy of prior articulation; and historical meaning is the orientation of present possibilities by retained organization. The proposal is theoretical rather than yet quantitative, but it establishes a clear modelling requirement: an experiential realization cannot be characterized by its current configuration alone.

7. Theoretical and Psychological Implications

7.1 From Generative Organization to Lived Experience

Generative consciousness denotes generative unity together with its intrinsic orientation and capacity for articulation. The configuration space formally represents the canonical forms that this articulation can assume. Each configuration expresses a particular coordination of the five operations, while relations among configurations make variations, continuities, and paths of reorganization formally representable. The space therefore provides a finite structure of self-articulation through which generative unity can assume differentiated forms.

Experiential consciousness, by contrast, denotes the embodied and situated realization of this generative organization. Through recursive projection, it becomes a lived field

in which unity experiences its own articulation as a world. Structure is lived as differentiated qualities, entities, and relations; process as continuity and change; and meaning as salience, significance, and orientation. Embodiment establishes a locus of experience within this field, allowing unity to encounter a world from a particular perspective and to experience itself as situated within that world.

Experiential consciousness can accordingly be understood as the lived traversal of an evolving field of possibilities. A conscious episode includes both its current organization and the influence of previous realizations upon it. Relatively stable patterns may correspond to modes or regions of experience, whereas experiential change may correspond to trajectories among such patterns. Memory carries previous articulations forward, valuation differentiates their present significance, and transformation reorganizes the field while integration sustains continuity.

Central to the model's phenomenological relevance is the hypothesis that canonical configurations of generative consciousness correspond to possible organizations of experiential consciousness. These correspondences are expected to be system-relative, because embodiment and retained history condition how a configuration is experientially realized.

Elaborating this correspondence may clarify the forms of felt meaning expressed through particular configurations and how the implicit directionality of generative consciousness becomes expressed within experience, orienting its unfolding without necessarily becoming available to reflective awareness. In this sense, the framework may provide a formal interpretation of unconscious organization: that which orients experience and action without being explicitly known by the subject.

An illustrative hypothesis concerning the correspondence between generative configurations and modes of experiential consciousness concerns experiences in which boundaries between self and world, or between subject and object, become attenuated. Such alterations have been described in meditation, mystical experiences and psychedelic states and may involve changes in bodily boundaries, self-location, agency, first-person perspective, and the experienced distinction between self and world (Canby et al., 2024; Millière, 2017; Nave et al., 2021). Within the present framework, these heterogeneous experiences may be investigated as patterns or regions in which this particular form of differentiation becomes relatively backgrounded, while other forms

of differentiation and integrated generative activity sustain a coherent and meaningful experiential field.

Conversely, some modes of experience may involve the intensified expression of boundaries and distinctions. Such modes may correspond to patterns in which constraint and differentiation become disproportionately foregrounded relative to permutation and transformation, and valuation becomes anchored to established divisions. Experience may then become organized through fixed categories, sharply separated positions, and meanings that resist alternative articulation. The resulting organization can provide stability and coherence while narrowing the range of relations, interpretations, and transformations available to the system. Psychological rigidity, defensive organization, and compartmentalized experience may represent different manifestations of this pattern, whereas more flexible coordination may support adaptation to changing demands and the revision of established responses (Kashdan & Rottenberg, 2010).

These correspondences remain hypotheses; systematic phenomenological analysis could extend this approach by relating such profiles to patterns, regions, and trajectories within the generative space. Such a mapping may provide a basis for formally characterizing the organization of subjective experience while preserving its intrinsically lived character.

7.2 Agency and Will

At the generative level, Will names the intrinsic directionality of generative unity toward articulation. Because structure, process, and meaning are inseparable, each generative operation carries an orientation within its own enactment. Will names this meaning-intrinsic directionality as it is expressed through particular operations and the configurations they compose.

Through projection, generative Will becomes implicit within embodied experiential consciousness and is expressed as agency: the capacity of an integrated system to participate in orienting its continued realization among meaningful possibilities. An agent carries forward the effects of previous transformations, values accessible possibilities, and reorganizes its activity while sustaining continuity across change. Its choices are situated within its embodied organization and history. Personal will is the

historically formed expression of this agency. Inherited dispositions, embodied conditions, affective patterns, and previous experience shape which possibilities become salient, meaningful, and available for enactment. Personal choice therefore expresses both the implicit generative orientation and the particular history through which that direction has become organized.

The framework further hypothesizes that affective integration may expand agency by bringing aspects of unconscious organization into reflexive awareness and reorganization. These include historically formed dispositions and affective patterns that orient experience and action without being explicitly recognized. Their integration may broaden the possibilities accessible for evaluation and action. Free will is accordingly understood as a developmental capacity to participate more fully in orienting one's trajectory. As limiting patterns become more flexibly integrated, personal will may express intrinsic generative Will with greater coherence. This interpretation can be investigated through changes in valuation, psychological flexibility, accessible trajectories, and reflexive reorganization.

8. Scope, Limitations, and Research Directions

The framework provides a conceptual and combinatorial architecture for relating generative consciousness to embodied experiential consciousness. Five primitive operations define thirty-two canonical configurations, while projection, integration, historical updating, and lived traversal characterize their proposed system-relative realization. Several elements remain theoretical hypotheses requiring further mathematical specification and empirical evaluation.

First, the five operations are proposed as a compact and nonredundant generative set. Their unique minimality has yet to be demonstrated. Alternative decompositions may be possible, and the distinction among the operations must ultimately be supported by their capacity to generate distinctive formal and phenomenological predictions.

Second, binary configurations are idealized expression profiles. Embodied experience is expected to involve graded, context-sensitive, and historically conditioned coordination among the operations. Further work must determine how such variation can be represented while preserving the architecture's five functional distinctions.

Third, formal adjacency indicates possible relations among configurations without establishing the dynamics of experiential change. A developed account must specify which transitions are accessible under particular conditions, how retained history affects their relative likelihood, and whether all formally available configurations can be realized phenomenologically or biologically.

Projection and integration also require further specification. Empirical work must specify and evaluate the proposed system-relative correspondences between formal configurations and embodied experiential patterns, while identifying the conditions that support continuity, flexibility, and coordinated realization. The configurations should therefore be treated as organizational hypotheses whose experiential relevance can be evaluated through convergent first-person, behavioural, physiological, and neural observations.

A necessary next step is the development of a formal phenomenology. The present architecture formalizes the organization of meaning through intrinsic orientation, differential valuation, system-relative realization, and historical integration, but does not yet specify the qualitative meanings associated with particular configurations. Developing a formal phenomenology will require systematic mappings between experiential descriptions and configurations, regions, directions, and trajectories within the formal space. Such mappings may clarify the forms of felt meaning expressed through particular configurations and how the implicit directionality of generative consciousness becomes expressed within experience. They may also illuminate how historically formed unconscious organization conditions this expression by orienting experience and action without necessarily becoming available to reflective awareness. The qualitative vocabulary associated with the traditional thirty-two paths provides one resource for developing these mappings and generating phenomenological hypotheses about how meaning is differentiated, experienced, and reorganized across development.

On the basis of such phenomenological mappings, initial research could operationalize experiential profiles as graded, historically situated patterns in the relative expression and coordination of the five operations. Repeated-measures studies combining structured first-person reports with behavioural measures could examine whether these profiles can be distinguished reliably across individuals, contexts, and modes of consciousness. Physiological or neural measures could subsequently test whether

phenomenologically identified profiles correspond to differentiable patterns of embodied activity.

The framework yields three initial testable propositions. First, information about accumulated history should improve prediction of subsequent experiential profiles beyond information about the current profile alone. Second, reduced integration should be associated with diminished continuity and flexibility across transitions. Third, affective integration should be associated with greater reflexive access to and reorganization of previously implicit affective patterns, greater flexibility in moving among experiential profiles, and a broader range of possibilities available for action. More broadly, the framework raises the question of whether developmental change exhibits systematic directionality that is not fully explained by adaptation or evolutionary fitness.

Further work will specify graded, history-dependent profiles and integration measures, and relate qualitative descriptions to formal patterns and trajectories. This may clarify how structured possibilities become lived, acquire historical significance, and shape memory, development, flexibility, and agency.

9. Conclusion

Conscious experience can be understood as the historically integrated realization of a generative space in which structure, process, and meaning are co-articulated through five primitive operations. The binary expression of these operations defines thirty-two canonical configurations proposed to be realized through recursive projection as embodied, historically constituted experiential organizations. Each realization modifies the conditions of those that follow, while the resulting recursive integration preserves coherence and carries prior effects into subsequent experience. Within this account, agency is the capacity to participate in orienting this historically developing traversal.

At its present stage, the framework provides a conceptual and combinatorial basis for further development. Graded profiles, realization and transition rules, integration measures, and phenomenological mappings are needed to specify and test correspondences between formal patterns and lived experience. Future research can examine how implicit and historically formed organization constrains agency and whether affective integration expands free will as a developmental capacity.

Existing theories of consciousness can contribute to elaborating aspects of the model. In turn, the framework offers a common generative vocabulary through which insights from different approaches can be compared and related. The paper therefore ends where it began: with an invitation into a shared space of possibilities where distinctions take form, relations acquire significance, and understanding unfolds through participation.

Declaration of competing interest

The author declares no competing interests.

Funding

No funding was received for this work.

Data availability

No data was generated or analysed in this theoretical study.

References

- Albantakis, L., Barbosa, L., Findlay, G., Grasso, M., Haun, A. M., Marshall, W., Mayner, W. G. P., Zaeemzadeh, A., Boly, M., Juel, B. E., Sasai, S., Fujii, K., David, I., Hendren, J., Lang, J. P., & Tononi, G. (2023). Integrated information theory (IIT) 4.0: Formulating the properties of phenomenal existence in physical terms. *PLoS Computational Biology*, 19(10 October). <https://doi.org/10.1371/journal.pcbi.1011465>
- Arsiwalla, X. D. (2024). *Qualia and the Formal Structure of Meaning*. <http://arxiv.org/abs/2405.01148>
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. In *Annual Review of Psychology* (Vol. 52). <https://doi.org/10.1146/annurev.psych.52.1.1>
- Barandiaran, X. E., Di Paolo, E., & Rohde, M. (2009). Defining agency: Individuality, normativity, asymmetry, and spatio-temporality in action. *Adaptive Behavior*, 17(5). <https://doi.org/10.1177/1059712309343819>
- Canby, N. K., Lindahl, J., Britton, W. B., & Córdova, J. V. (2024). Clarifying and measuring the characteristics of experiences that involve a loss of self or a

- dissolution of its boundaries. *Consciousness and Cognition*, 119.
<https://doi.org/10.1016/j.concog.2024.103655>
- Chalmers, David. J. (1995). Facing Up To The Hard Problem of Consciousness. *Journal of Consciousness Studies*, 2(3).
- Chittick, W. C. (1989). *The Sufi Path of Knowledge: Ibn al- 'Arabi's Metaphysics of Imagination*. State University of New York Press.
- Clark, A. (2013). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *The Behavioral and Brain Sciences*, 36 3, 181-204-181–204.
<https://doi.org/10.1017/S0140525X12000477>
- Colombetti, G. (2014). *The Feeling Body: Affective Science Meets the Enactive Mind*. The MIT Press. <https://mit.edu>
- Copenhaver, B. P. (1992). *Hermetica: The Greek Corpus Hermeticum and the Latin Asclepius in a New English Translation, with Notes and Introduction*. Cambridge University Press.
- Dale, R., & Kello, C. T. (2018). “How do humans make sense?” multiscale dynamics and emergent meaning. *New Ideas in Psychology*, 50.
<https://doi.org/10.1016/j.newideapsych.2017.09.002>
- De Jaegher, H., & Di Paolo, E. (2007). Participatory sense-making: An enactive approach to social cognition. *Phenomenology and the Cognitive Sciences*, 6(4).
<https://doi.org/10.1007/s11097-007-9076-9>
- Deacon, T. W. (2011). *Incomplete Nature: How Mind Emerged from Matter*. W. W. Norton & Company.
- Dehaene, S., & Naccache, L. (2001). Towards a cognitive neuroscience of consciousness: Basic evidence and a workspace framework. *Cognition*, 79(1–2).
[https://doi.org/10.1016/S0010-0277\(00\)00123-2](https://doi.org/10.1016/S0010-0277(00)00123-2)
- Friston, K. J. (2010). The free-energy principle: a unified brain theory? *Nature Reviews Neuroscience*, 11, 127-138-127–138. <https://doi.org/10.1038/nrn2787>
- Girardot, N. J. (1983). *Myth and Meaning in Early Taoism: The Theme of Chaos (hun-tun)*. University of California Press.
- Haggard, P. (2017). Sense of agency in the human brain. In *Nature Reviews Neuroscience* (Vol. 18, Number 4). <https://doi.org/10.1038/nrn.2017.14>
- Hesp, C., Smith, R., Parr, T., Allen, M., Friston, K. J., & Ramstead, M. J. D. (2021). Deeply felt affect: The emergence of valence in deep active inference. In *Neural Computation* (Vol. 33, Number 2, pp. 398–446). MIT Press Journals.
https://doi.org/10.1162/neco_a_01341

- Hoffman, D. D., & Prakash, C. (2014). Objects of consciousness. *Frontiers in Psychology*, 5(JUN). <https://doi.org/10.3389/fpsyg.2014.00577>
- Hoffman, D. D., Singh, M., & Prakash, C. (2015). The Interface Theory of Perception. *Psychonomic Bulletin and Review*, 22(6). <https://doi.org/10.3758/s13423-015-0890-8>
- Husserl, E. (1980). Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy. In *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. <https://doi.org/10.1007/978-94-009-8779-1>
- Kaplan, A. (1997). *Sefer Yetzirah: The Book of Creation: In Theory and Practice* (Revised). Weiser Books.
- Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. In *Clinical Psychology Review* (Vol. 30, Number 4). <https://doi.org/10.1016/j.cpr.2010.03.001>
- Kleiner, J. (2020). Mathematical models of consciousness. *Entropy*, 22(6). <https://doi.org/10.3390/E22060609>
- Lambie, J. A. (2020). The demanding world of emotion: A Gestalt approach to emotion experience. *New Ideas in Psychology*, 56. <https://doi.org/10.1016/j.newideapsych.2019.100751>
- Laukkonen, R., Friston, K. J., & Chandaria, S. (2025). A beautiful loop: An active inference theory of consciousness. *Neuroscience and Biobehavioral Reviews*, 106296. <https://doi.org/10.1016/j.neubiorev.2025.106296>
- Lawrence, D. P. (1999). *Rediscovering God with Transcendental Arguments: A Contemporary Interpretation of Monistic Kashmiri Śaivism*. State University of New York Press.
- Levine, J. (1983). MATERIALISM AND QUALIA: THE EXPLANATORY GAP. *Pacific Philosophical Quarterly*, 64(4). <https://doi.org/10.1111/j.1468-0114.1983.tb00207.x>
- Linson, A., Clark, A., Ramamoorthy, S., & Friston, K. J. (2018). The Active Inference Approach to Ecological Perception: General Information Dynamics for Natural and Artificial Embodied Cognition. *Frontiers in Robotics and AI*, 5. <https://doi.org/10.3389/frobt.2018.00021>
- Lundh, L. G., & Foster, L. (2024). Embodiment as a synthesis of having a body and being a body, and its role in self-identity and mental health. *New Ideas in Psychology*, 74. <https://doi.org/10.1016/j.newideapsych.2024.101083>
- Mashour, G. A., Roelfsema, P., Changeux, J. P., & Dehaene, S. (2020). Conscious Processing and the Global Neuronal Workspace Hypothesis. In *Neuron* (Vol. 105,

- Number 5, pp. 776–798). Cell Press.
<https://doi.org/10.1016/j.neuron.2020.01.026>
- Merleau-Ponty, M., & Landes, D. A. (2013). Phenomenology of perception. In *Phenomenology of Perception*. <https://doi.org/10.4324/9780203720714>
- Millière, R. (2017). Looking for the self: Phenomenology, neurophysiology and philosophical significance of drug-induced ego dissolution. In *Frontiers in Human Neuroscience* (Vol. 11). <https://doi.org/10.3389/fnhum.2017.00245>
- Nagel, T. (1974). What Is It Like To Be a Bat? In *What Is It Like to Be a Bat?* <https://doi.org/10.1093/oso/9780197752791.001.0001>
- Nave, O., Trautwein, F. M., Ataria, Y., Dor-Ziderman, Y., Schweitzer, Y., Fulder, S., & Berkovich-Ohana, A. (2021). Self-boundary dissolution in meditation: A phenomenological investigation. *Brain Sciences*, 11(6).
<https://doi.org/10.3390/brainsci11060819>
- Oizumi, M., Albantakis, L., & Tononi, G. (2014). From the Phenomenology to the Mechanisms of Consciousness: Integrated Information Theory 3.0. *PLoS Computational Biology*, 10(5). <https://doi.org/10.1371/journal.pcbi.1003588>
- Plotinus. (1991). *The Enneads* (J. Dillon, Ed.; S. MacKenna, Tran.; Abridged). Penguin Books.
- Prentner, R. (2019). *Consciousness and Topologically Structured Phenomenal Spaces*.
- Proclus. (1963). *The Elements of Theology* (E. R. Dodds, Ed. & Tran.; Second). Clarendon Press.
- Rudrauf, D., Bennequin, D., Granic, I., Landini, G., Friston, K., & Williford, K. (2017). A mathematical model of embodied consciousness. *Journal of Theoretical Biology*, 428. <https://doi.org/10.1016/j.jtbi.2017.05.032>
- Signorelli, C. M., Wang, Q., & Khan, I. (2021). A compositional model of consciousness based on consciousness-only. *Entropy*, 23(3), 1–18.
<https://doi.org/10.3390/e23030308>
- Thompson, E. (2004). Life and mind: From autopoiesis to neurophenomenology. A tribute to Francisco Varela. *Phenomenology and the Cognitive Sciences*, 3(4).
<https://doi.org/10.1023/b:phen.0000048936.73339.dd>
- Tononi, G. (2008). Consciousness as integrated information: A provisional manifesto. In *Biological Bulletin* (Vol. 215, Number 3). <https://doi.org/10.2307/25470707>
- Varela, F. J., Thompson, E., Rosch, E., & Kabat-Zinn, J. (1991). The embodied mind: Cognitive science and human experience. In *The Embodied Mind: Cognitive Science and Human Experience*. <https://doi.org/10.29173/cmplct8718>

Whitehead, A. N. (1978). *Process and Reality: An Essay in Cosmology* (D. R. Griffin & D. W. Sherburne, Eds.; Corrected). Free Press.

Williford, K., Bennequin, D., Friston, K., & Rudrauf, D. (2018). The projective consciousness model and phenomenal selfhood. *Frontiers in Psychology*, 9(DEC). <https://doi.org/10.3389/fpsyg.2018.02571>