

Field Articulation Theory:  
A Global-First, Field-Relational Account of Consciousness.

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**Abstract**

Field Articulation Theory (FAT) proposes a global-first, field-relational account of consciousness in which bounded perspectives emerge through constraint-driven differentiation within a globally structured dynamical system. By rejecting local ontological priority, FAT formalises this individuation through Markov blanket dynamics and critical phase transitions, stability through constrained basin structures and transitions between experiential states through heteroclinic trajectories.

Subjective experience can be understood as distinct dynamical regimes in which a single dynamical system organises itself over time, with each mode reflecting how stable or flexible its underlying patterns are. Within this framework, qualitative differences in experience arise from differences in system-level organisation rather than from distinct modes or mechanisms of experience.

FAT dissolves the hard problem as a production problem and relocates the explanatory gap to the mismatch between structurally specified capacity and qualitatively realised perspective.

FAT generates empirically tractable predictions, including global-to-local temporal asymmetry, constrained state-space geometry and directional transition dynamics, accessible

through time-resolved and information-theoretic analyses of neural and behavioural data. It also repositions both the hard problem and the combination problem (how minute instances of subjective experience, inherent in fundamental physical entities like electrons or photons, combine to form the unified, complex consciousness experienced by humans) as questions about the differentiation and calibration of locally bounded perspectives. The focus therefore shifts to the conditions under which local viewpoints are calibrated to global structure and how variations in this calibration correspond to distinct forms of conscious experience, offering a unified dynamical account of conscious experience.

## **Introduction**

This framework emerges from the integration of three domains: recurring phenomenological structures across contemplative, aesthetic and transformative experience (James, 1902; Otto, 1917), candidate dynamical mechanisms spanning neural field dynamics and variational self-organisation (Friston, 2010; Wright & Bourke, 2016; Rabinovich et al., 2014; 2018) and cross-domain regularities across cognition, biological morphogenesis and computational pattern spaces (Ramstead et al., 2021; Levin, 2025; Lyre, 2020). These domains jointly constrain the form of any coherent account, so that any adequate theory must satisfy conditions imposed by all three, motivating a shift from descriptive mapping between domains to formal specification and informing the development of a global-first dynamical framework.

Phenomenological categories correspond to dynamically distinct regions of the system's constrained state space, generating structured phenomenology from first principles. Of these categories, grace, the sublime, transcendence, higher cognition and selfhood correspond to identifiable dynamical regimes, each defined by specific basin geometry, perturbation

tolerance and coherence characteristics. In each of these, experiential forms reflect stable yet flexible regions of the system's state space: configurations that differ in how strongly they resist disruption, how readily they reorganise under constraint and how coherently they integrate activity across scales. More stable regimes support sustained self-structure, while more sensitive regimes allow rapid reconfiguration and heightened openness to global constraint, producing the qualitative differences associated with distinct modes of experience.

This essay proposes a field-relational, global first ontology of consciousness that narrows and relocates both the hard problem and the combination problem by *inverting* the standard explanatory direction of consciousness. Where dominant frameworks, including Integrated Information Theory (Tononi et al., 2016), Global Neuronal Workspace Theory (Dehaene & Changeux, 2011) and the Free Energy Principle (Friston, 2010), retain a bottom-up, emergence-based ontology in which global consciousness is produced or determined by local neural processes, FAT posits a self-articulating global field as ontologically primary, with local articulations as dynamically stabilised, partially decoupled modulations arising through symmetry phase transition and constraint satisfaction. This constitutes an architecturally novel shift from emergence-based to constraint-driven, field-first explanation.

FAT is situated within field-first approaches but differs in three respects: the field is treated as a constraint-governed relational structure rather than a substrate; individuation is specified through Markov blanket dynamics (Pearl, 1988; Friston, 2010) and critical phase transitions (Haken, 1983; Rabinovich et al., 2014) and phenomenological structure is derived from an asymmetry between global constraint and local modelling. FAT thereby provides both a mechanistic and phenomenological account of how bounded perspectives arise. The relational structure it suggests is exhausted by the constraints it instantiates rather than by

underlying substance, the system does not have an underlying substance with properties; its identity consists entirely in the constraints and relations that organise it, with *intrinsic* here referring to immanent relational organisation rather than properties of a substrate.

While FAT adopts Markov blanket formalism, critical dynamics and large-scale neural coordination, it treats individuation, consciousness and boundary formation as complementary signatures of a more fundamental process: the constraint-governed articulation of local perspectives within a globally structured field. This framing avoids collapsing FAT into the metaphysical commitments of the Free Energy Principle (Friston, 2010), where Markov blankets would function as primitive ontological boundaries. Instead, they are taken as formal descriptions of stability conditions rather than ontological partitions. Here, individuation is determined by phase transition and synergetic frameworks, as also suggested by statistical interpretations of Markov blankets (Bruineberg, Hesp, & Kiverstein, 2018), which specify dynamical regimes without requiring explicit boundary structures, that is, a system is individuated in terms of coherent patterns of activity rather than fixed boundaries.

From its global-first commitments, FAT predicts that conscious systems exhibit a characteristic dynamical profile in which large-scale coherence exerts a temporally leading constraint on local dynamics, so that changes at the large scale tend to precede and shape subsequent local reconfiguration. Conscious states therefore reflect coordinated shifts across scales, rather than independent local events aggregating after the fact. Transitions between stable experiential states are modelled as phase shifts between attractor regimes, involving reorganisation under constraint violation and transition through regions of heightened susceptibility into new metastable configurations under reconfigured global organisation.

This implies measurable temporal precedence and directional influence of large-scale network activity over local dynamics, quantifiable via lagged dependency and information-theoretic measures. These predictions follow from the field-relational structure governing the articulation of bounded perspectives within a globally organised system.

### **Metastable Dynamics and Neural Computation**

Conscious systems are characterised by the perspectival organisation that FAT takes to be constitutive of conscious experience, meaning that they exhibit structured, bounded modes of organisation in which global dynamics are expressed through locally stabilised perspectives. They occupy a restricted dynamical regime characterised by metastable organisation under nonequilibrium, critical-like conditions; a balanced regime between order and disorder, where it remains highly sensitive and capable of flexible reorganisation. This regime combines critical sensitivity with residual attractor geometry, rather than corresponding to a strict second-order critical point in which basin structure collapses. Empirically, it is associated with mixed phase structure, where bistability or multistability coexists with long-range correlations. System configurations are continually destabilised and reconfigured across attractor landscapes, yielding bounded yet flexible trajectories through state space. Trajectories evolve continuously within a structured phase space without settling into fixed states (Lorenz, 1963). These systems demonstrate how behaviour can remain globally constrained while exhibiting ongoing variability, with distinct regions of the attractor corresponding to dynamically coherent regimes rather than discrete, isolated states (Strogatz, 2015; Hilborn, 2000).

In this regime, order parameters are dynamically maintained collective variables rather than static descriptors; they function as low-dimensional quantities that encode global organisation and constrain the dynamics of local systems. Their persistence depends on nonequilibrium flux, which prevents relaxation while sustaining low-dimensional coherence. Global constraint is therefore realised as an ongoing dynamical relation, in which order parameters organise local degrees of freedom, while the flux that maintains the system simultaneously sustains the conditions for its organisation. This means that global organisation is not fixed in advance but continuously produced and maintained through ongoing dynamics, with large-scale coherence and local articulations co-emerging in a self-sustaining loop of constraint and reconfiguration.

These local articulations correspond to metastable trajectories temporarily confined within regions defined by the current configuration of order parameters, while remaining sensitive to perturbation. Stability is conditional and time-dependent, reflecting the continuous reconstitution of the system's effective landscape. Transitions occur via structured heteroclinic dynamics: shallow and evolving basin structure permits movement between transiently coherent states without large external perturbation. In such systems, trajectories pass through sequences of saddle states connected by directed channels, yielding reproducible, history-dependent transitions between metastable configurations (Rabinovich et al., 2014; 2018). Related models of coupled neural ensembles show how perturbations can induce sequential switching along heteroclinic cycles, producing stimulus-sensitive but structured state transitions. These findings support the interpretation of neural dynamics as structured movement through a metastable landscape rather than transitions between isolated attractors.

Heteroclinic and homoclinic transition structures of this kind are well-characterised in nonlinear dynamical systems, where trajectories move between unstable and metastable configurations along geometrically constrained pathways determined by bifurcation structure (Ma et al., 2025).

Computational frameworks of excitable neural ensembles (coactive groups of neurons that form functional circuits, mediating perception, memory and behaviour through synchronised activity) provide a formal analogue for this heteroclinic transition framework (Korotkov et al., 2023). In these models, networks of three or more coupled excitable neurons described by generalised Lotka–Volterra dynamics generate heteroclinic cycles in phase space, where trajectories pass through sequences of saddle states connected by directed channels, with sequence and dwell time shaped by external perturbations. FAT interprets these trajectories as transitions between metastable experiential regimes: states such as insight, grace, or the sublime correspond to passages near critical regions of the system’s constrained state space. Perturbations alter trajectories through the basin structure without modifying the global constraint topology, illustrating how bounded perspectives remain stabilised while sensitive to global field structure. This provides a computationally tractable account of directional, state-dependent transitions in consciousness, linking neural ensemble dynamics to phenomenological and cognitive signatures of local–global coordination. These transition dynamics align with models of cognitive sequencing in which information is encoded as movement through metastable neural state spaces (Rabinovich & Varona, 2018) and arise within a nonequilibrium near-critical regime sustaining sensitivity to constraint violation across successive transitions.

These mechanisms describe a single class of systems rather than independent explanatory layers. Renormalisation group structure ensures scale-consistency between global constraint and local articulation (Wilson, 1971; Kadanoff, 2013), supporting FAT's characterisation of conscious systems as occupying a restricted region of dynamical parameter space in which near-critical sensitivity, metastability, order-parameter dynamics and structured transitions co-occur. This is consistent with accounts that treat the emergence of increasingly structured dynamical regimes across physical, biological and cognitive domains as mediated by phase transitions, symmetry breaking and attractor formation, within systems capable of modelling and influencing their own trajectories (Singh et al., 2025). FAT situates conscious systems within this broader continuum while specifying the conditions under which perspectival organisation arises.

### **The Hard Problem and the Combination Problem**

The hard problem and the combination problem are usually treated as distinct: the former asks how physical processes yield experience, the latter how micro-experiential elements yield unity. FAT argues that this distinction is superficial. Both presuppose local ontological priority, where mechanisms proceed from local constituents toward global consciousness. FAT rejects this assumption. It treats the global field as ontologically primary, with local perspectives arising as dynamically stabilised articulations within it. Thus the standard formulations of both problems lose their footing, giving way to a different question of how a globally unified, intrinsically experiential field differentiates into bounded, perspectival configurations under constraint.

## **Cosmopsychism, Panpsychism and Field-First Frameworks**

This places FAT in proximity to cosmopsychism and panpsychism, but the resemblance is limited. Cosmopsychism typically models the cosmos as a subject composed of parts and consciousness as fundamentally located within the universe as a whole, rather than in individual organisms and thus inherits the de-combination problem, while panpsychist accounts often face similar combination issues in explaining how micro-experiential units generate unified consciousness. FAT rejects this mereological framework: local perspectives are not derivative units of a globally structured field but locally stabilised differentiations produced through constraint, partial decoupling and symmetry-breaking within a relational field.

A globally unified experiential field differentiates into bounded perspectives when its constraint dynamics generate locally stabilised, partially decoupled modelling regimes whose metastable organisation realises thick experientiality. Empirical work on neural criticality and phase transitions (Beggs & Plenz, 2003; Haimovici et al., 2013; Melloni et al., 2025) supports the relevance of such dynamics, while typically interpreted within bottom-up frameworks. FAT reinterprets them as evidence of constraint-driven reorganisation within a globally structured system. A more distinctive empirical commitment is the prediction of global-to-local temporal asymmetry, which remains to be tested.

Several field-first proposals share FAT's global-first intuition without providing a formal architecture. Broader field-theoretic precedents make comparable claims, treating consciousness as a field that is primary and only contingently expressed in neural systems (John, 2001; Pockett, 2013; Mocombe, 2024). These approaches converge on the view that the field is primary, localised experiential states are derivative and the brain functions as a

site of localisation rather than production. None, however, combine all three. That is, an individuation mechanism, a formally specified dynamical regime and empirically testable predictions.

Electromagnetic field theories of consciousness (McFadden, 2002, 2020) similarly locate consciousness in a globally integrated field rather than in local neural constituents. However, these accounts typically specify a physical substrate without defining the dynamical conditions under which conscious organisation arises, nor do they derive the structure of phenomenology from that organisation. FAT generalises the field-based intuition while replacing substrate-specific identification with a constraint-governed relational framework and a formally specified dynamical regime that constrains both the emergence and the structure of conscious experience.

FAT retains the field-first orientation of these proposals but extends it through a formally specified dynamical regime and an explicit account of individuation.

### **The Explanatory Gap**

FAT does not claim to eliminate the explanatory gap; instead it situates it within a single ontological framework. The question becomes how differentiation within a globally experiential field generates bounded perspectives, rather than how physical processes generate experience.

That is a shift from a problem of ontological generation to a problem of constraint-driven differentiation within an already experiential domain, where the central task is to specify the

conditions under which perspectival organisation arises rather than to account for the categorical divide between non-experiential and experiential entities.

FAT then relocates the explanatory gap to the transition between structurally specified capacity and qualitatively realised perspective. The minimal dynamical architecture, supported empirically by near-critical cortical activity “poised near the boundary between stability and chaos” (Toker et al., 2021) and by “critical-like neuronal dynamics in vivo [involving] both continuous and discontinuous phase transitions” (Wang et al., 2023), specifies when and how perspectives arise, but it does not fully derive why these conditions are accompanied by phenomenal character. In this respect, the transition from thin, structural experientiality to thick, phenomenologically realised perspective remains an internal explanatory task for the theory rather than a problem it fully resolves.

Mendelovici (2019) argues that “the ubiquity of combination problems suggests the ignorance hypothesis,” on which the difficulty reflects epistemic limitations rather than metaphysical structure, that combination problems arise from limits in our knowledge or conceptual tools, not from the underlying nature of consciousness, a view that supports FAT’s claim that it dissolves the standard local-priority formulation of the combination problem without eliminating all questions of unity.

The logical structure is therefore preserved: thin experientiality → thick experientiality remains an internal explanatory task; combination-problem dissolution is limited; the residual issue is narrower, not gone. Lee (2022) raises a related challenge: even if experience is identified with a structural relation, why that relation has phenomenal character rather than remaining purely formal may still reassert itself. FAT relocates this residual question as the

explanatory gap, now narrower and framed explicitly in terms of empirically and formally specified dynamical conditions, but it remains an open problem within the theory's scope rather than a fully resolved one.

### **Near-Critical Stochastic and Quantum Dynamics**

FAT rests on a minimal dynamical architecture specified by four converging frameworks. The Free Energy Principle formalises conditional independence via Markov blankets, treated as statistical signatures of bounded articulation. Neural criticality identifies regimes of heightened susceptibility compatible with metastability. Integrated Information Theory indexes the extent to which local configurations instantiate globally constrained coherence. Synergetics formalises global–local asymmetry via the slaving principle, where slowly varying order parameters constrain fast dynamics. Another property of the dynamical regime warrants note. Within predictive-processing frameworks, the same generative machinery supports perception, action and imagination; local articulations are therefore continuously generative modulations of the global field rather than passive expressions of a fixed constraint regime (Friston, 2010; Clark, 2016; Hohwy, 2013). The sublime, in particular, is the moment at which generative activity encounters a mismatch it cannot resolve within its current constraint regime, precipitating a heteroclinic transition toward a new coherence state.

This architecture specifies a stochastic, nonequilibrium system near bifurcation, in which metastable states are continuously re-stabilised by global constraints governing transitions between coherent regimes (Haken, 1983; Wilson, 1971; Kadanoff, 2013). Constrained basin stability (CBS) operationalises persistence under defined perturbation regimes (Menck et al., 2013; Schultz et al., 2017; Van Kan et al., 2016), quantifying stability without determining ontology. Bounded perspectives correspond to regimes stable under constrained perturbations

yet sensitive to reorganisation. Stochasticity is constitutive: near-bifurcation systems amplify small fluctuations, precipitating transitions between metastable configurations (Rabinovich et al., 2014; Rabinovich & Varona, 2018). Quantum-level indeterminacy in ion channels and related processes may contribute, but FAT does not require sustained quantum coherence or nonlocal effects. Local articulations remain classical while modulated by stochastic events with quantum origins, providing sensitivity without extending ontological commitments. The applicability of basin stability measures depends on the geometry of the underlying state space: while estimation remains meaningful for complex but structured basins, it becomes unreliable in systems with riddled or intermingled basins, where arbitrarily small perturbations can induce transitions (Schultz et al., 2017). This highlights its sensitivity to constraint structure. The global–local relation is processual: constraint is enacted through the continuous organisation of local dynamics, while local configurations remain provisional and flux-dependent.

Empirical support for this processual account is provided by large-scale neural dynamics, particularly the default mode network. DMN baseline activity reflects persistent, endogenously driven large-scale coherence that organises faster local dynamics even in the absence of external task demands (Raichle et al., 2001; Buckner, Andrews-Hanna, & Schacter, 2008). Intrinsic DMN activity forms part of an ongoing generative regime in which global constraint structure is maintained and continuously updated, aligning with the slowly varying order parameters required by FAT’s minimal dynamical architecture.

Evidence indicates that these dynamics are functionally continuous with conscious experience rather than epiphenomenal to it. Activity within the DMN supports experiences decoupled from immediate sensory input and enables memory representations to structure

ongoing conscious content (Poerio et al., 2017). In contrast to static measures, dynamic connectivity tracks the temporal unfolding of mind-wandering and correlates with fluctuations in spontaneous thought during task engagement (Kucyi and Davis, 2014). Extending this, DMN-linked oscillatory states can predict upcoming involuntary perceptual transitions in bistable vision (Lyu et al., 2022), with phase coupling between the precuneus and primary visual cortex preceding shifts in conscious content. Together, these findings indicate that intrinsic network dynamics can precede and shape the organisation of perceptual experience even when external stimuli remain unchanged.

These observations support the interpretation of the DMN as a large-scale constraint structure whose slow dynamics shape the emergence and transition of local experiential states. This is consistent with FAT's expectation that slow, globally organised dynamics influence faster local processes. Accordingly, DMN activity is treated here as a plausible empirical instance of metastable, globally structured dynamics in which bounded perspectives are continuously articulated through evolving constraint regimes rather than assembled from local elements. This positions the DMN as an empirical candidate for the slow, globally organised dynamics required by FAT, rather than a direct demonstration of its full causal structure.

The relationship between DMN baseline activity and conscious experience, including self-referential processing and the phenomenology of mind-wandering and internally directed awareness (Northoff et al., 2006; Berkovich-Ohana et al., 2014), further supports FAT's account of bounded perspectival experience as constituted through ongoing global constraint dynamics rather than driven by external stimulus. The global-to-local temporal precedence FAT predicts finds a clear empirical parallel in the DMN's role as a slow, globally organised

network whose fluctuations constrain the dynamics of faster local systems across multiple spatial and temporal scales.

Quantum field theoretic accounts, such as Vitiello's development of Umezawa's framework, provide a formal parallel: cortical organisation emerges via spontaneous symmetry breaking, with long-range correlations organising local dynamics (Vitiello, 2001; Umezawa, 1993). FAT aligns with features of these accounts—slaving, symmetry-phase transitions, and local articulations as field excitations—but departs in not assuming quantum ontology. Similarly, Quantum Darwinism and Hiley–Pylkkänen's implicate-order formalism provide a formal vocabulary for selection, redundancy, and global-to-local constraint (Zurek, 2009; Hiley & Pylkkänen, 2010, 2013). In FAT, these serve as tools for articulating mechanisms stabilising local configurations rather than asserting that consciousness physically instantiates these dynamics. FAT integrates these mechanisms into a single account of individuation, metastability, and phenomenology.

Ontological claims remain conceptual: FAT treats the global field as explanatory for local organisation, a position not derived from CBS, criticality, or Markov-blanket formalism alone. The combination of minimal dynamical architecture and formal correspondence specifies operational principles and a conceptual framework for global–local differentiation while maintaining this distinction. Empirically, cortical activity during conscious states is poised near the boundary between stability and chaos and exhibits critical-like behaviour across phase transitions (Toker et al., 2021; Wang et al., 2023). These observations support the minimal dynamical architecture without entailing a global-first ontology, leaving apparent locality as an inference from globally organised dynamics.

## **The Phenomenological Corollary**

This dynamical architecture admits a constrained phenomenological interpretation. Bounded experience corresponds to metastable regimes characterised by constrained basin stability: coherent experience reflects trajectories stable under perturbations compatible with prevailing constraints. Distinct phenomenological profiles track distinct regions within this dynamical space, itself shaped by the global field's order parameter structure. FAT thus predicts not only that certain dynamical regimes correspond to specific phenomenological profiles but that the space of possible experiential configurations is bounded by global constraint geometry.

Grace corresponds to regimes of high but non-rigid stability, with broad perturbation tolerance and coherence maintained without foreclosure of global signal. The constrained basin is broad rather than deep: the system returns reliably to its metastable configuration while remaining sensitive to global dynamics beyond the local model. *The sublime* arises when basin structure shallows and susceptibility to global dynamics increases, expanding experiential salience without exhausting locally modelled structure. Transitions between states follow heteroclinic channels, passing through regions of reduced stability that permit endogenous reorganisation, introduce directional flow, and support stochastic facilitation, enhancing exploration while preserving coherence (Carmantini et al., 2021; Rabinovich & Varona, 2018; Vidaurre et al., 2017; Balaguer-Ballester et al., 2013). These sequences form a structured temporal repertoire mapping local dynamics to phenomenological transitions, operationalisable via neural time-series analysis.

FAT identifies three phenomenological phases within a single dynamical landscape. Grace marks appropriate porousness to global constraint: the system maintains coherence while

remaining sensitive to higher-order structure. The sublime marks the critical encounter with what exceeds the local model: prediction error propagates, coherence becomes temporarily unstable and global structure registers acutely. Transcendence is post-critical stabilisation: a new coherence integrates previously inaccessible structure, partially catching up to the global field. These are not sequential stages but regions between which the system moves along heteroclinic trajectories (Afraimovich et al., 2004), providing a formal framework for transient, reproducible sequential dynamics.

Phenomenology is thus the intrinsic character of metastable, constraint-saturated organisation realised within a bounded perspective. Variation in experience reflects variation in stability, susceptibility, and transition structure within a globally organised, nonequilibrium system. The explanatory gap is relocated to the transition between structurally specified capacity and qualitatively realised perspective: how differentiation within a globally experiential field yields the specific qualitative character of bounded experience. FAT specifies the space of possible phenomenological profiles and transitions, with identification of specific qualitative character as a theoretical commitment rather than a derived result.

### **Philosophical Architecture**

FAT belongs to the tradition of process-relational ontology, sharing with Whitehead (1929) the rejection of static substance in favour of relational process as the fundamental ontological category, and with Simondon (2020) the treatment of individuation as a dynamical outcome of a preindividual field rather than a property of pre-given entities. Agential realism (Barad, 2007) contributes the principle that boundaries are enacted through ongoing dynamical processes rather than given in advance, formalised in FAT through Markov blanket dynamics

as stability conditions rather than ontological primitives. Absential causation (Deacon, 2011) contributes the formal basis for constraint operating as an absent attractor: global coherence states not yet achieved nonetheless govern the trajectory of local dynamics toward them, grounding FAT's account of the global field as always already operative beyond the reach of any local model. These affinities position FAT within process-relational experiential monism: a single self-articulating field whose identity is exhausted by its constraint relations, differentiating into bounded perspectives through formally specified dynamical processes. FAT departs from each predecessor at a precise point. Where Whitehead's actual occasions are discrete, epochal units of becoming (Whitehead, 1929), FAT's field is continuous and differentiating, with phase transition as its basic event structure rather than concrescence. Where Simondon's preindividual field implies but does not fully develop a global-first ontological commitment, FAT states it explicitly and grounds it in a formally specified dynamical regime. Where agential realism develops a relational ontology without generating a theory of consciousness, FAT extends the relational architecture to consciousness specifically, deriving phenomenological structure from constraint asymmetry rather than leaving the experiential domain unaddressed. The differentiator across all three is the same: FAT combines a process-relational ontology with a formally specified differentiation mechanism and a direct empirical interface, where predecessors offer ontology and philosophy without the dynamical specification that generates testable predictions. FAT's process-relational architecture is directly operationalised in the temporal and phenomenological domain. Grace, the sublime, and transcendence correspond to structured heteroclinic trajectories through state space constrained by global coherence (Bogotá et al., 2023; Rabinovich & Varona, 2018; Carmantini et al., 2021), with the range of possible phenomenological profiles bounded by the global field's order parameter structure.

Markov blanket dynamics formalise how local perspectives maintain coherence while remaining responsive to global constraints (Clark, 2017), operationalising Barad's (2007) principle that boundaries are dynamically enacted rather than given. Heteroclinic channels encode directionality and asymmetry in transitions between experiential states, providing a formal mechanism for temporal sequencing and phase-sensitive calibration consistent with active inference accounts of integrated temporality (Bogotá et al., 2023). Together, these features illustrate how FAT translates process-relational ontology into computationally and empirically tractable predictions, linking philosophical commitments to measurable patterns of neural or systemic dynamics.

### **Submergent Cosmopsychism and Phenomenal Bonding**

FAT's global-first orientation places it in structural proximity to cosmopsychist frameworks, but the underlying architectures diverge along a precise axis: subject-first versus field-first, and composition versus differentiation. Submergent cosmopsychism posits a unified cosmic subject from which local subjects are derived as restricted aspects or modes, typically through aspectual limitation (Shani, 2015), perspectival restriction (Shani & Keppler, 2018), or mode-based derivation (Keppler & Shani, 2020). This framework inherits the de-combination problem: if individual subjects are proper parts or aspects of a cosmic subject, an account is required of how one subject yields many without collapsing into a single undivided perspective or fragmenting into genuinely independent ones, generating structural puzzles equivalent to those the combination problem poses in reverse (Miller, 2017). Combination problems recur across theories of consciousness, suggesting a broader explanatory limitation rather than an issue confined to any single framework (Mendelovici, 2019).

FAT rejects the mereological and subject-first architecture that generates this problem. The global field is not a subject, even in a minimal or proto-subjective sense. Subjectivity arises only at the level of locally stabilised articulation, as a consequence of the specific dynamical conditions that constitute a bounded, coherent, partially decoupled perspective. Local perspectives are not components of a larger subject but metastable differentiations within a relational field, produced through constraint-driven partial decoupling and symmetry-breaking. Because FAT posits no global subject, the de-combination problem does not arise: the entity whose partition would generate it is never introduced.

Phenomenal bonding theories operate within a structurally opposed framework (Goff, 2017). They posit micro-experiential units as fundamental and introduce a primitive bonding relation to explain how micro-experiences compose into unified consciousness, retaining a bottom-up, compositional architecture in which phenomenology is constructed through the fusion of experiential parts. FAT rejects this architecture at its foundation: there are no micro-experiential units and therefore no experiential parts requiring combination, and no bonding relation is required. Unity is the field's primary condition rather than an achievement assembled from constituents. FAT replaces composition with differentiation and bonding with constraint-driven partial decoupling, such that local perspectives arise through the stabilisation of bounded configurations within a globally unified field.

The architectural distinction is direct. Submergent cosmopsychism is subject-first and faces de-combination; phenomenal bonding is micro-first and faces combination; FAT is field-first and process-relational, grounding individuation in constraint-driven differentiation within a continuous field. Positions that attribute isolated micro-experiential properties without compositional structure are excluded by the same global-first constraint: individuation is not primitive but dynamically produced.

## **Structural Identity and the Positing Objection**

FAT's central identity claim is that experience is identical to the intrinsic character of metastable, constraint-saturated organisation realised within a bounded perspective. This position has a philosophical precedent in *neurophenomenal structuralism*, which identifies phenomenological structure with the relational invariants of neural dynamics rather than any specific physical substrate (Lyre, 2020). In this view, the structure of phenomenal experience (how experiences feel and relate to one another) is fully determined by, and systematically maps onto, the structure of underlying neural activity.

FAT extends this structuralist commitment by specifying the ontological direction, that relational structure with which experience is identified is globally primary rather than locally instantiated. This is a structural identity claim, in which experience is not a property attributed to a system but the immanent character of a specific class of dynamical organisation.

This claim introduces experiential intrinsicity as a theoretical commitment that the dynamical framework does not independently derive. The objection that this constitutes positing rather than explaining, that genuine explanation requires epistemic satisfaction rather than the labelling of an explanatory target (Chalmers, 1997), must be addressed directly. FAT therefore treats experiential intrinsicity as a *structural identity postulate* within an otherwise fully specified dynamical framework: it is the commitment required to connect the formal account of perspectival differentiation to the qualitative character that makes the hard problem hard. This postulate is not an auxiliary addition. It follows from the constraints any

non-dualist, non-production account must satisfy. Three considerations establish this. First, explanatory completeness: without it, the dynamical framework specifies the structure of perspectival systems without addressing what those systems are from within, leaving the central explanandum untouched. Second, avoidance of dualism: introducing experiential character as an emergent property produced by the dynamics would reintroduce the production relation FAT dissolves, while treating it as ontologically separate would generate a new version of the hard problem internal to the theory. Third, structural continuity: identifying experience with the intrinsic character of a specific dynamical regime is the minimal commitment consistent with FAT's global-first ontology, which requires that the field's character be specified rather than left indeterminate.

Quantitative frameworks for consciousness, including hierarchical integration, organised complexity, and metastability (Ugail et al., 2025), provide theory-neutral operational measures for the dynamical features FAT identifies as constitutive of bounded experience, offering a methodological bridge between formal specification and empirical investigation. Critiques of phenomenal structuralism, however, raise the concern that purely relational accounts struggle to explain intersubjective comparability and the persistence of qualitative character across different systems or over time (Sebastián, 2025).

FAT addresses this question through the structural identity postulate: experiential intrinsicity links relational dynamics to qualitative character without introducing emergent dualism, in other words, experience feels the way it does because of how the system is organised and operates, not because something extra is added, because the identity claim is restricted to a specific class of metastable, constraint-saturated organisation as realised from within a bounded perspective. Approaches emphasising psycho-physical identity and causal sufficiency (Sanfey, 2023) further highlight the explanatory requirement that any theory

reconcile consciousness with physical dynamics without invoking problematic production or combination relations: FAT meets this requirement by treating the field's global structure as primary, ensuring that local metastable articulations instantiate intrinsic experience while remaining responsive to measurable dynamical constraints.

### **Thin and Thick Experientiality**

FAT operates with two levels of experientiality that must be distinguished to prevent the structural identity claim from being misread as either panpsychism or idealism. Thin experientiality designates the field-level structural-dispositional character of the global field: it is the capacity of the field's constraint relations to support perspectival articulation. Thin experientiality involves no subject, no qualitative character, no proto-phenomenal content and no phenomenological complexity. It is a formal predicate specifying that the field's relational structure is the kind of structure within which bounded perspectival experience can arise, rather than a kind of structure from which experience must be separately produced. The global field is experiential in this thin sense: experiential intrinsicity is the field's character as a constraint-governed relational structure that generates perspectival systems through differentiation.

Thick experientiality designates the qualitative, subject-involving phenomenological character of locally stabilised perspectives. It is what experience is like from within a bounded, coherent, partially decoupled modulation of the global field: the redness of red, the painfulness of pain, the specific qualitative texture of a given experiential state. Thick experientiality arises only under bounded articulation, as a function of the specific dynamical conditions—metastable organisation, constraint saturation, partial decoupling, proximity to

bifurcation—that constitute a locally coherent perspective within the globally constrained field.

In other words, thin experientiality refers to the field's capacity to support structured, perspective-generating organisation, whereas thick experientiality is the concrete, qualitative character of experience as it appears within those locally stabilised perspectives.

The transition from thin to thick experientiality marks the relocated explanatory gap within FAT. The dynamical framework specifies the conditions under which thick experientiality arises: the metastable regime, the constraint structure, the degree of partial decoupling and the proximity to bifurcation. The theory specifies the conditions of bounded articulation while leaving open the question of why these conditions are accompanied by qualitative phenomenal character rather than a merely formal perspectival structure. The transition is not treated as magic. FAT specifies the conditions of this transition but does not close the gap between structural specification and qualitative realisation. This is the explicit limit of the theory's current reach, and it is a narrower and more tractable gap than the one the hard problem originally posed, because the entities on either side are not categorically incommensurable: thin and thick experientiality are both within a single experiential field rather than across the boundary between experiential and non-experiential domains.

This positioning is consistent with work that reframes the apparent intractability of the hard problem. Berent (2024) argues that the roots of the hard problem are partly psychological, arising from cognitive biases that shape explanatory intuitions. *Presentation and the Ontology of Consciousness* similarly shows that the irreducibility of first-person presentation can coexist with a globally monist ontology, rather than requiring a dualist framework (Livingston, 2017). FAT's relocated gap sits within this space: it concerns the relation

between structural specification and qualitative realisation within a single ontological domain, rather than a divide between fundamentally different kinds of substance.

Quantitative approaches to hierarchical integration and metastability (Ugail et al., 2025) provide candidate measures of the dynamical conditions FAT identifies as governing the thin-to-thick transition. Structural analyses of phenomenological comparison show that experiential profiles are bounded and partially incomparable in ways consistent with a constrained state-space geometry (Díaz-Boils et al., 2025). Critiques of phenomenal structuralism emphasise that relational accounts must specify the conditions under which structure is realised from within a perspective rather than merely described externally (Sebastián, 2025), aligning with FAT's distinction between thin and thick experientiality. Deductive approaches linking consciousness to causal organisation (Sanfey, 2023) further suggest that the relocated gap concerns determinate structural conditions rather than an irreconcilable metaphysical divide.

## **Conclusion**

FAT positions consciousness as a system in which bounded perspectives are differentiated and stabilised within a globally constrained dynamical system. By rejecting local ontological priority, it narrows and relocates both the hard problem and the combination problem, reframing them as the question of how structurally specified dynamics yield qualitatively realised perspectival configurations.

The theory's contribution resides in integrating a process-relational ontology with a restricted dynamical regime in which near-critical sensitivity, metastable organisation and dynamically

sustained order parameters co-occur under nonequilibrium conditions. Within this regime, individuation emerges through constraint-driven partial decoupling, stability is formalised via constrained basin structure and transitions between experiential states follow structured heteroclinic dynamics. These principles collectively specify the conditions under which bounded perspectives arise, the topology of the space of possible experiential configurations and the pathways through which transitions occur.

The contributing elements are all precedented. Field-based consciousness proposals already treat consciousness as a field and make binding/integration central: Cemi field theory says consciousness is “a manifestation of the brain's electromagnetic EM field,” and that the EM field “is capable of integrating vast quantities of information into a single physical system” (McFadden, 2002). More metaphysically expansive field-first proposals also already link consciousness, symmetry breaking and differentiation into individual experience (Strømme, 2025). Markov blankets are well developed but also contested as metaphysics: Bruineberg et al. stress that doing philosophical work with them “requires additional philosophical premises and cannot be justified by an appeal to the success of the mathematical framework alone” (Bruineberg et al., 2021). Criticality and phase-transition research supports the empirical perspective of conscious cortex operating at the boundary between stability and chaos, including bistability in critical-like regimes (Toker et al., 2021), while heteroclinic models capture directed transitions through metastable state spaces (Rabinovich et al., 2014; Rabinovich & Varona, 2018).

FAT makes distinct empirical predictions: large-scale coherence exerts leading constraints on local dynamics, the geometry of phenomenological state space is constrained by global order parameters and transitions between metastable regimes are directional. These predictions are

quantifiable through time-resolved and information-theoretic analyses of neural activity, enabling empirical investigation beyond simple correlational approaches.

The explanatory gap is thus relocated rather than eliminated: the open question concerns how structurally specified dynamical organisation produces specific qualitative character within bounded perspectives. This gap is narrower than the traditional hard problem because it no longer covers a categorical divide between experiential and non-experiential domains. Here, consciousness is the intrinsic character of metastable, constraint-saturated organisation within a globally structured field, with the central question being how globally constrained dynamical systems differentiate into the structured space of possible perspectives.

### **Implications: State-Space Geometry and the Structure of Experience**

Field Articulation Theory implies that phenomenology expresses a structured dynamical space whose geometry determines the range, organisation and transitions of possible experience. Constrained state-space geometry is not an secondary feature, rather a central empirical and conceptual commitment where the structure of possible experiential configurations corresponds directly to the system's metastable architecture. Categories such as grace, the sublime and transcendence are not descriptive superimpositions; they designate dynamically distinct regions and transition pathways within a formally characterisable space. Consequently, phenomenological taxonomy can, in principle, be derived from basin geometry, perturbation tolerance and the geometry of heteroclinic flow.

Comparable basin-structured reconstructions have been developed across dynamical systems, where attractors and their basins are inferred from time-series data to characterise multistable

behaviour (Friston, 2010; Tognoli & Kelso, 2014; Deco & Jirsa, 2012; beim Graben et al., 2019). In these systems, basins of attraction define regions of convergence in state space and can be empirically reconstructed from observed trajectories (Hutt & beim Graben, 2017; Rabinovich et al., 2008; Breakspear, 2017). This establishes that basin-structured reconstruction is not a theoretical aspiration but an existing empirical methodology, already applied to neural systems and capable of estimating stability structure, transition dynamics and multistable organisation from time-series data. FAT makes an analogous claim about experiential systems; however, this claim is not derived from the dynamical systems literature but from FAT's foundational account of global constraint and local articulation. The empirical framework of basin reconstruction is therefore recruited as a means of testing these independently derived predictions, rather than providing their theoretical basis.

This perspective attempts to reframe the empirical study of consciousness. Rather than correlating isolated neural features with reported states, research should reconstruct the geometry of the underlying state space and map how different regions correspond to distinct experiential regimes. Existing approaches already point in this direction. The consciousness state space (CSS) model represents phenomenology within a structured space defined by time, awareness and emotion (Berkovich-Ohana et al., 2014), while Dynamical Emergence Theory identifies experiential content with the topology and geometry of metastable macrostates (Moyal et al., 2019, 2020). Related work shows that individual streams of consciousness can be characterised as trajectories through intrinsically defined dynamical landscapes (Coppola et al., 2022). FAT extends these approaches by specifying the constraint structure that organises this space globally and governs transitions within it. Dynamical systems techniques can therefore be used to estimate basin depth, stability structure and transition pathways in neural data, while measures such as Granger causality and Transfer

Entropy can detect the predicted global-to-local constraint asymmetry. The geometry organises not only individual states but also their connectivity, in which transition accessibility, trajectory asymmetry and clustering of experiential regimes emerge from the constrained topology.

The same geometry extends across domains typically treated as distinct. Aesthetic experience, contemplative states, cognitive insight and pathological disruption can be seen as occupying different regions of a single state space. The claim that the sublime, mathematical insight, mystical experience and discovery share a common dynamical signature is structural rather than metaphorical: each corresponds to trajectories through regions of reduced basin stability and heightened sensitivity to global constraint. This opens the possibility of a unified science of experience in which cross-domain similarities are explained by shared dynamical organisation rather than analogy.

Heteroclinic dynamics introduce directional structure into movement through state space. Transitions between experiential regimes are therefore expected to be asymmetric and empirically detectable: certain pathways remain accessible while others are effectively prohibited and the system's history constrains its future trajectory. Phenomenological structure is thus temporally extended, shaped not only by the current state but by position within a directed flow on the underlying landscape.

This framework also suggests a principled approach to intervention. Therapeutic, contemplative and pharmacological practices can be understood as methods for restructuring state-space geometry: altering basin depth, expanding perturbation tolerance or facilitating transitions between regimes. The aim is to make adaptive configurations more accessible and more stable, shifting intervention from content change to dynamical reorganisation. In other

words, intervention targets the underlying dynamical conditions of experience rather than its representational content, by reconfiguring the stability and transition structure of experiential regimes.

The emphasis on geometry clarifies both the scope and the limits of explanation. FAT accounts for why experiential regimes exist, how they relate and how transitions occur, by deriving them from the structure of the underlying dynamical system. What remains open is why particular regions possess their specific qualitative character. Future work can proceed along converging lines: refining empirical reconstruction of experiential state space and tightening the correspondence between geometrical structure and qualitative phenomenology. These implications define a conceptual framework in which consciousness research focuses on the constrained, structured space of possible perspectives. FAT's distinctive claim is that this space is neither arbitrary nor locally constructed, it is globally organised and dynamically articulated, such that understanding its geometry is functionally equivalent to understanding the structure of experience itself.

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