



Toward a Field-Based Framework of Awareness: Quantum Trilogy Theory of Consciousness

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Abstract

This paper introduces the Quantum Trilogy Theory of Consciousness (QTTC), a conceptual framework that integrates structural principles from quantum field theory (QFT) with the Trilogy Theory of Consciousness (TTC). QTTC proposes that consciousness arises not from computation or neural complexity alone, but from structured modulations within a universal awareness field. In this framework, awareness is conceived as a timeless, non-local, and selfless field—analogue to the quantum vacuum—while consciousness emerges not merely as a result of transformation, but through sequential volitional mental activities that culminate in a temporal, local, and self-referential identity.

QTTC adapts formal parallels from QFT, such as quantized excitation, symmetry breaking, and gauge fixing, as conceptual tools to reimagine the emergence of subjective experience, volition, and identity. It reframes the Hard Problem of Consciousness by shifting the question from how brain matter generates qualia to how a structured awareness field gives rise to intentional and self-aware mental states. While the theory remains speculative and mathematically undeveloped, it offers a conceptual bridge between physics, phenomenology, and cognitive science. By positioning volition and identity as intrinsic modulations of the awareness field, QTTC opens new interdisciplinary avenues for exploring the nature of consciousness beyond reductive or dualist accounts.

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Introduction

Consciousness remains one of the most elusive frontiers in science and philosophy. Although neuroscience has mapped many neural correlates of conscious experience, it has yet to explain the origin of awareness itself—the “what it is like” quality of subjective experience.

Many contemporary scientific accounts discuss consciousness in broadly physicalist terms, often linking it to neural or electrochemical processes and sometimes portraying it as an adaptive construct with limited causal efficacy (Dennett, 1991). To avoid overstatement, I do not attribute to historical physicists an explicit endorsement of a reductionist “biological computation” view; rather, I note that their discussions are frequently interpreted within a materialist context. This paper proposes a different framing. In contrast, philosophical traditions dating back to Descartes have argued that consciousness is ontologically distinct from the physical world. However, dualist models face the enduring challenge of explaining how a non-physical mind could interact with physical systems.

Seeking a middle path, some modern theories propose that consciousness is a fundamental feature of reality. Panpsychism and information-integration theories suggest that consciousness may be intrinsic to matter (Tononi, 2016) or to the organization of information itself (Chalmers, 1996). Earlier thinkers such as Whitehead (1929) and Bohm (1980) envisioned consciousness as emerging from a deeper underlying process that gives rise to both mind and matter. For clarity, Bohm’s implicate order is not a physical field in the technical sense; it is an ontological proposal about enfolded order. In QTTC, the term “field” is used metaphorically and conceptually in a similar spirit—not as a claim about a literal physical entity. Stapp (2007) extended this view, suggesting that consciousness plays a participatory role in quantum measurement, influencing the evolution of physical systems.

In recent years, this line of inquiry has turned toward quantum theory. Quantum Field Theory (QFT)—with its core concepts of vacuum states, field excitations, and symmetry breaking—offers a promising formal language for modeling dynamic, foundational systems, including consciousness. Yet, despite increasing theoretical interest, few models have successfully translated these quantum structures into a coherent cognitive framework.

This paper introduces the Quantum Trilogy Theory of Consciousness (QTTC), a field-based conceptual framework that extends the Trilogy Theory of Consciousness (TTC) (Farhadi, 2023a). QTTC adapts structural principles from QFT and applies them metaphorically to the domain of consciousness, proposing that awareness is not an emergent byproduct of brain computation, but rather a structural field component. Through this lens, intention, decision-making, and self-reflection arise as recursive excitations and transformations within the Universal Awareness Field (UAF)—a conceptual counterpart to the quantum vacuum. Here and throughout, by “literal quantum computation” I mean models (e.g., Orch-OR) that posit actual quantum-mechanical processes in microtubules or neurons as the physical substrate of consciousness; QTTC does not make this assumption and instead employs structural analogies from QFT as metaphorical scaffolding.

QTTC thus reframes the Hard Problem of Consciousness not as a metaphysical puzzle nor a neurocomputational mystery, but as a problem of structured field interaction. By offering a novel conceptual architecture that links cognitive processes with field dynamics, this framework opens new possibilities for theoretical, philosophical, and interdisciplinary exploration.

Table 1: Comparison of Quantum Concepts in QM, QFT, and QTTC

QFT Structure	QFT Description	QTTC Mapping (Metaphorical)
Quantum Vacuum	Lowest-energy state with latent potential and fluctuations	Universal Awareness Field (UAF) as a neutral, selfless background of potential awareness
Field Excitation	Quantized disturbances (particles) of a field	Noëtons as discrete units of structured awareness (subjective moments)
Symmetry Breaking	Selection of a specific state from symmetric possibilities	Intention as a directional modulation that initiates conscious engagement (DSIA)
Gauge Fixing	Elimination of redundant degrees of freedom to make observables well-defined	Framing of experience / “I” as stabilizing a first-person reference frame

The Trilogy Theory of Consciousness

TTC provides the foundational structure upon which QTTC is built. Rather than viewing consciousness as a singular or static phenomenon, TTC conceptualizes it as the integration of three interdependent components:

- Awareness refers to the capacity to perceive or register any form of intelligence—whether derived from external stimuli, internal states, or cognitive processes.
- Intention is the volitional impulse to act, emerging in response to a given awareness.
- Self-reflection allows for introspective evaluation of one’s awareness and intention, anchoring the sense of agency.

This tripartite structure reframes consciousness as a recursive, layered process—not reducible to reactive computation or mechanistic stimulus-response chains.

Stages of Awareness

TTC outlines awareness as a dynamic process unfolding across four cognitive stages

Preselection Stage

Raw information from internal or external sources is processed to form intelligence—structured informational units. These units are filtered and prepared for potential entry into awareness.

Selection Stage

From this pool, one intelligence is selected for awareness. This selection occurs either through:

- Discretionary Selection of Intelligence for Awareness (DSIA)—a volitional, intentional act of attention, or
- Selection of information based on Algorithm (SIBA)—an automatic, non-volitional filtering mechanism.

Transformation Stage

The selected intelligence is then transformed from objective information into subjective experience. This is the critical transition where cognition becomes awareness, the core subject of the hard problem of consciousness.

Post-Transformation Stage

Once formed, awareness becomes available for a range of intentional higher-order mental functions, including:

- Deliberate decision-making
- Intentional attention

- Intentional evaluation and reasoning
- Intentional memory formation
- Intentional comparison and judgment

These are mediated through Awareness-Based Choice Selection (ABCS), which bridges awareness to volitional engagement and conscious behavior.

Stages of Decision-Making

Mirroring the structure of awareness, TTC describes decision-making as a three-stage process:

Preselection Stage

Cognitive processes generate a primary choice by integrating raw information, genetic predispositions, upbringing, past experiences, and emotional state. This information is organized into informational and emotional intelligence, which serve as substrates for reasoning. Alongside this, a parallel process of counter-reasoning generates alternative choices for later selection. These options are shaped by through contextual framing.

Selection Stage

From the available options, one choice is selected via one of two mechanisms:

- ABCS—a conscious, deliberative process rooted in active awareness and volition, or
- Stimulus-Conditioned Behavioral Automation (SCBA)—an automatic, habituated response requiring minimal conscious input.

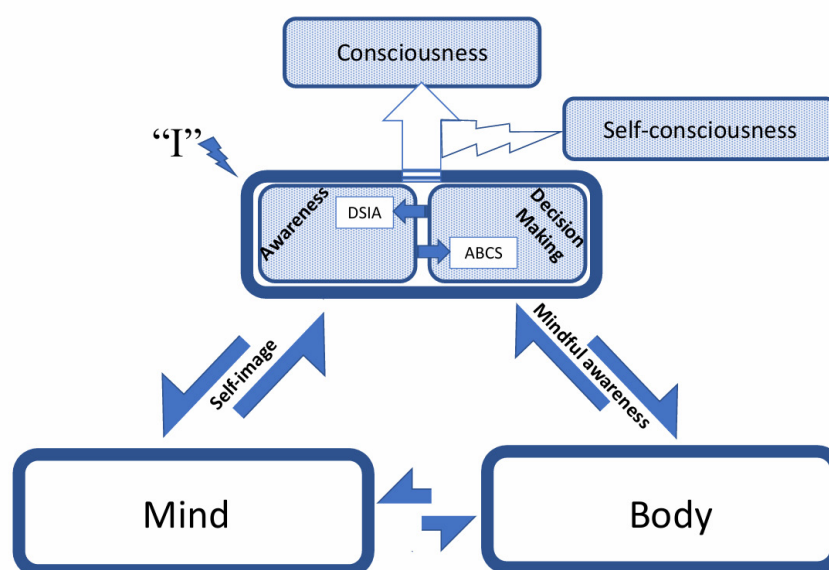


Figure 1. Based on Trilogy Theory of Consciousness we are a union of "I," our mind and our bodies. "I" composed of an amalgam of two mental functions, Discretionary selection of information for awareness (DSIA) or intentional attention and awareness-based choice selection (ABCS) or free will that are the core awareness and decision-making processes, respectively.

Quantum Field as a Metaphorical Framework for the Awareness Process

QTTC adapts the layered cognitive architecture of TTC to structural elements of QFT, using a metaphorical framework that describes how fields give rise to particles and interactions across space and time (Zee, 2010; Weinberg, 1995). Within this framework, awareness is reinterpreted not as an emergent property of neural computation but as a structured transformation within a universal field, where excitations give rise to timeless and selfless subjective experience. In this view, awareness is not the endpoint of brain processing but the foundation upon which intention and reflective cognition are built. The following structural analogies illustrate

how QTTC aligns elements of QFT with TTC's cognitive framework:

Awareness Field as Quantum Vacuum

In QFT, the vacuum state is not empty, but filled with fluctuating energy and virtual particles. It serves as the ground state from which all physical excitations arise (Zee, 2010).

In QTTC, awareness is considered as a Universal Awareness Field (UAF)—a neutral, formless substrate capable of giving rise to subjective experience. This field does not think, choose, or remember; rather, it is a timeless, selfless, and non-local background. Just as the quantum vacuum enables the emergence of particles, the UAF offers a potential space for the formation of awareness through interactions with brain and mind structures.

Intention as Symmetry Breaking

In QFT, symmetry breaking occurs when a system transitions from multiple equally possible configurations to a specific state, leading to the emergence of distinct properties—such as mass arising from the Higgs field. In QTTC, this mechanism metaphorically represents the emergence of intention. From among several potential mental trajectories, one is spontaneously selected, initiating a direction for conscious engagement. This process corresponds to DSIA—a volitional act rooted in awareness. Intention, in this view, is not arbitrary but an awareness-governed modulation that breaks the field's neutrality, setting consciousness into motion—akin to symmetry breaking in a quantum field.

Framing Experience as Gauge Fixing

In QFT, gauge fixing is a mathematical operation that eliminates redundant degrees of freedom in field equations, allowing observable predictions to emerge (Weinberg, 1995). QTTC adopts this metaphor to explain how the first-person perspective—the "I"—is formed. Gauge fixing corresponds to the framing of subjective experience through the coupling of awareness and intention. This process, driven by the intertwined action of DSIA and ABCS, filters and stabilizes experience around a self-referential axis. The resulting "self" is not a static substance but a dynamically configured reference frame, analogous to how gauge fixing sets coordinates for prediction within a broader symmetry space.

Subjective Experience as Field Excitation (Noëtons)

In QFT, particles such as photons or electrons are modeled as quantized excitations of underlying fields. QTTC extends this principle metaphorically: awareness is considered as excitation within the Universal Awareness Field, and the resulting noëtons are its quantized units. These noëtons are not physical particles but represent discrete phenomenological ripples—units of structured awareness. Each noëton reflects a singular, localized transformation within the field, giving rise to a specific subjective experience. As the quantum of awareness, the noëton functions as the cognitive counterpart to physical particles in QFT.

It is worth noting that, in contrast to other quantum theories of consciousness that often borrow from quantum mechanics (e.g., superposition, collapse, or decoherence), QTTC deliberately restricts its metaphors to QFT. This avoids importing features—such as wavefunction collapse—that are absent from QFT's formalism. By grounding its analogies strictly in QFT, QTTC aims to provide a structurally coherent framework for modeling awareness, intention, and subjective experience without relying on mechanisms outside the theory's scope.

Other Properties of QFT Not Currently Incorporated into QTTC

While QTTC draws on several structural principles from QFT, certain features of the physical theory remain outside its present framework. These features are set aside for now but may offer promising directions for future theoretical development:

Quantum Entanglement

Quantum entanglement describes non-local correlations between particles, where the state of one is linked to

the state of another regardless of spatial separation. QTTC does not currently integrate entanglement, but it may provide a useful metaphor in later stages of the theory. In particular, entanglement could offer a concept lens for understanding empathy, synchrony, and universal awareness—phenomena in which shared mental states or intentions appear to arise across individuals without direct sensory or linguistic exchange. In future work, entanglement may serve as a structural scaffold for exploring interpersonal attunement and collective intentionality within the QTTC framework.

Field Configuration History

In QFT, the present state of a field is determined by its equations of motion and boundary conditions; this does not imply memory or retention of past events in the way classical systems might. QTTC does not incorporate this property at present, but a metaphorical adaptation of configuration history could eventually enrich the model. One possibility is that each excitation of the Universal Awareness Field (UAF)—each act of awareness—might leave behind a subtle modulation of the field’s potential, shaping the trajectory of subsequent experiences. This would not resemble conventional memory storage but could represent an iterative restructuring of the awareness field itself. Such a mechanism, if developed, might help explain the continuity of selfhood, the accumulation of insight, and the gradual deepening of reflective awareness—at both individual and collective levels—over extended timescales.

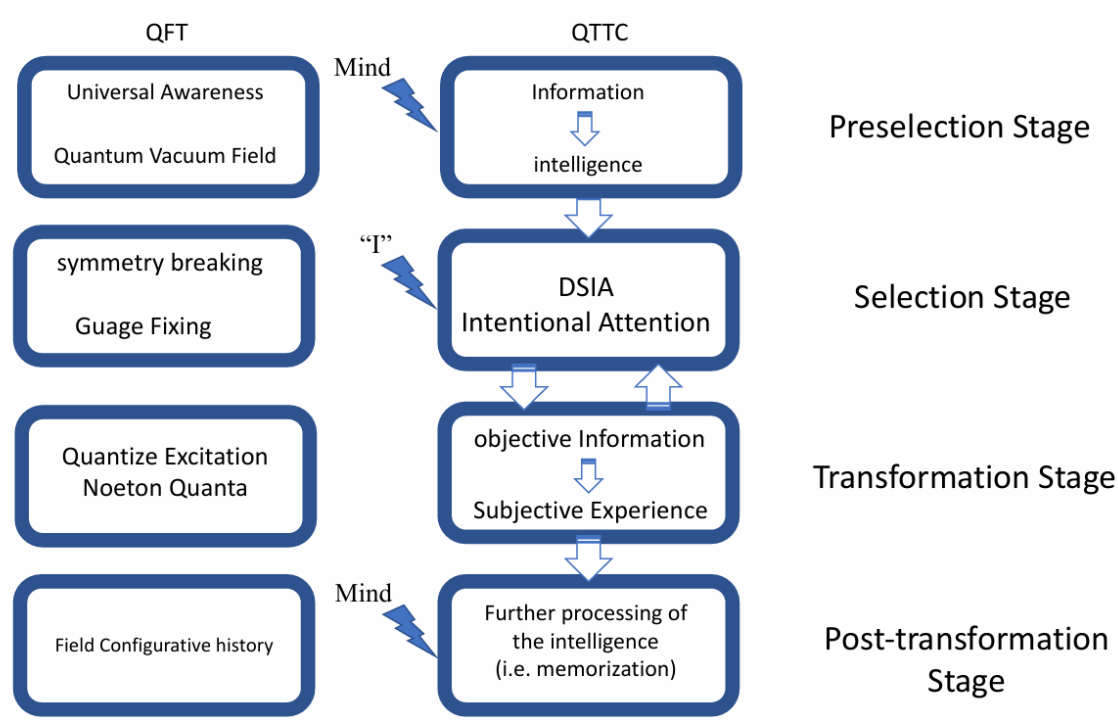


Figure 2: The parallel of QFT in different stages of the awareness process. The discretionary selection of information for awareness (DSIA) before the transformation stage, positioning the "I" as a key step in the awareness process.

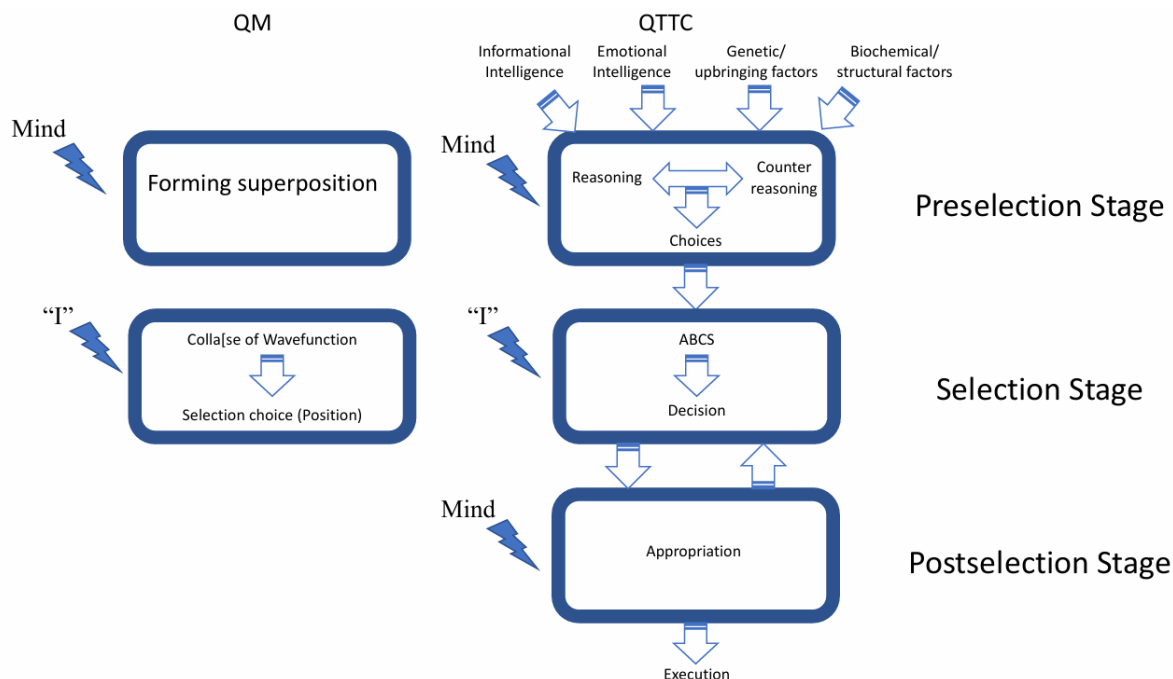


Figure 3. The parallel of quantum mechanics and QTTC in different stages of the decision-making process. The awareness-based choice selection (ABCS) is the heart of decision-making process and allows us to have free will in our decision-making process.

QTTC as a Bridge Between Physics and Cognitive Science

QTTC offers a novel conceptual bridge linking cognitive science, phenomenology, and theoretical physics. Rather than proposing a mechanistic account of brain function or literal quantum computations within brain matter, QTTC advances a field-based architecture in which awareness, intention, and identity formation are reframed as structural analogies with quantum field dynamics (Zee, 2010; Weinberg, 1995).

Within this framework, consciousness is neither reduced to a computational artifact of neural activity nor relegated to an immaterial realm detached from physical laws. Instead, it is conceptualized as a structured modulation within a Universal Awareness Field (UAF)—a universal awareness field conceptually analogized to the quantum vacuum—one that supports metaphorical counterparts of excitation, symmetry breaking, and gauge fixing.

QTTC does not simply borrow language from physics. It imports the formal logic of field interactions to reframe enduring challenges in cognitive science: decision-making, selfhood, and the subjective experience. This structural isomorphism enables QTTC to function as a translational framework, providing:

- A common language for physicists and cognitive scientists to describe field dynamics across both physical and mental domains.
- A conceptual bridge between first-person experience and cognitive phenomena (e.g., decisions, intentions, shifts in awareness), treating them as structured events in the awareness field.
- A philosophical alternative to both dualism and reductive materialism, allowing for meaningful engagement with consciousness without collapsing it into immaterial abstraction or pure computation.

By casting awareness as a dynamic process rather than a static entity, QTTC encourages a relational view of consciousness—one in which subjective experience arises through interactions within and between structured fields of potential. This relational model offers a platform for interdisciplinary dialogue, integrating insights

from quantum theory, cognitive science, and phenomenology, while avoiding the pitfalls of speculative mysticism or overly simplistic reductionism.

QTTC and the Hard Problem of Consciousness

The Hard Problem of Consciousness—how and why subjective experience arises from physical processes—remains one of the most intractable challenges in cognitive science and philosophy of mind (Chalmers, 1996). While dominant scientific models attempt to explain consciousness as an emergent property of neural complexity, they often fall short in addressing the intrinsic, first-person character of experience—the elusive “what it is like” aspect of awareness.

Rather than offering a mechanistic or reductive solution, the QTTC seeks to reframe the Hard Problem. In the QTTC framework, awareness is not viewed as emergent from matter, but as a structured interaction within a Universal Awareness Field (UAF). Consciousness, then, is understood as a transformation of this selfless, non-local, timeless field into a directed, time-stamped intention capable of guiding volitional decision-making and formation of temporal and local sense of agency.

This theoretical shift moves the focus from generation to modulation. QTTC does not ask how matter produces awareness; it asks how awareness becomes structured through its coupling with biological and cognitive systems. This approach resonates with field-based ontologies, in which fields are not products of the entities they influence, but preconditions for interaction and transformation.

Thus, QTTC recasts the Hard Problem into a new form:

How do biological systems interface with the Universal Awareness Field to structure subjective experience?

While QTTC does not propose a definitive causal chain, it explores—with caution and conceptual openness—possible biological interfaces that might mediate this interaction:

- Microtubules, key cytoskeletal components within neurons, have been proposed by Hameroff and Penrose (2014) as quantum-coherent substrates capable of enabling non-local signaling or field sensitivity.
- DNA helices, through their charge distribution and vibrational resonance modes, may act as biological antennas, potentially supporting distant cell communication and field interaction (Myakishev-Rempel, 2023).

Under specific conditions, these structures might support vibrational or electromagnetic couplings that enable recursive exchange between material systems and the UAF. QTTC does not claim these as empirically validated mechanisms, but proposes them as hypothetical gateways—regions of possible interface where awareness could modulate and be modulated by matter.

Crucially, even if such interfaces are confirmed, they do not resolve the mystery of qualia—the inner feel of experience. Instead, they deepen the question:

How can excitations within a non-local, selfless field be shaped into temporally structured, meaningful experiences through the dynamics of biological systems?

In this way, QTTC offers a conceptual reorientation of the Hard Problem. The core issue is not merely about physical emergence from neural data, but about how structured modulation of a universal field gives rise to agency, intentionality, and subjectivity. This perspective encourages a broader exploration of consciousness—one that moves beyond neurobiology to consider the theoretical architecture of dynamic, non-local fields as a legitimate domain for inquiry.

Comparison with Other Quantum Field Theories of Consciousness

The intersection of quantum theory and consciousness has long inspired speculative models, yet few have succeeded in constructing a coherent cognitive framework grounded in quantum principles. While numerous theories explore the connection between quantum physics and mind, they differ significantly in assumptions, mechanisms, and objectives. The QTTC distinguishes itself by offering a layered cognitive architecture—mapping structural concepts from QFT onto mental phenomena such as awareness, volition, and identity formation.

Unlike models that attempt to locate consciousness in microphysical quantum events or literal energy fields, QTTC advances a non-reductive, non-dualistic field architecture aimed at modeling subjective transformation, rather than physical measurement or collapse events.

Several key comparisons illustrate this distinction:

- Henry Stapp (1993, 2007) proposed that conscious attention plays an active role in collapsing quantum wavefunctions, suggesting that the mind participates in physical reality formation. However, Stapp's model does not articulate how consciousness unfolds cognitively or structurally over time. In contrast, QTTC introduces a stage-based cognitive framework that spans preselection, selection, transformation, and post-transformation phases, each corresponding to a dynamic interaction within the awareness field.
- The Orchestrated Objective Reduction (Orch-OR) model by Penrose and Hameroff (1994, 2014) focuses on microtubules as quantum-coherent structures within neurons and posits that gravitationally induced wavefunction collapses create discrete conscious moments. QTTC diverges sharply from this approach. It does not rely on the presence of quantum states in biological matter but instead uses QFT to show how awareness becomes structured into intention and decision. QTTC translates QFT dynamics into mental architecture, not brain microphysics.
- Atmanspacher (2004) has explored quantum models based on ontic indeterminacy, entanglement, and rigged Hilbert spaces, proposing that randomness underlies mental causation. QTTC builds upon this foundation but incorporates a systematic cognitive scaffold that does not rely on randomness. Instead, it uses excitations of the Universal Awareness Field as the basis of awareness and treats these excitations as causal drivers of intention through Awareness-Based Choice Selection (ABCS). Within this framework, symmetry breaking represents intention, while gauge fixing underlies the formation of selfhood. This structure emphasizes the active field dynamics of consciousness rather than attributing mental causation merely to randomness.
- Amoroso's Noetic Field Theory (NFT) (2010) presents a radically different view. It proposes that mind functions are quantized and physically detectable, involving entities such as psychons or noeons, with aspirations toward experimental validation through technologies like laser interferometry. In contrast, QTTC's noëtons are non-empirical virtual quanta—conceptual units that represent discrete modulations of the Universal Awareness Field (UAF). While NFT seeks physical measurability, QTTC offers a phenomenological scaffold grounded in subjective structure rather than instrumentation.
- The biophysical model of Geesink and Meijer (2016) proposes that coherent electromagnetic frequency patterns stabilize biological order and influence consciousness through resonance. QTTC does not align with this empirical resonance theory. Instead, it likens the UAF to the quantum vacuum—a non-energetic, non-material background capable of structured excitation that gives rise to intentional cognition, without requiring frequency-based interaction.
- Görnitz's Protyposis (2018) introduces Abstract Quantum Information (AQI) bits as the precursor to both matter and mind, grounded in a pre-meaning state of potential. QTTC builds on this notion by proposing noëtons as structured excitations that transform pure potential into meaningful awareness. Unlike Protyposis, which stops at informational abstraction, QTTC maps the developmental pathway from field excitation to structured subjective experience.
- Mocombe (2023) categorizes existing quantum consciousness models into dualist, reductionist, globalist,

- or EM-based paradigms. Yet most remain tethered to neural substrates or electromagnetic interactions. QTTC departs from this trend by decoupling awareness from brain generation, instead viewing the brain as a modulatory interface—a conduit for interacting with the non-local, timeless awareness field.

In summary, QTTC avoids literalist or mechanistic interpretations of quantum theories of mind. Its unique contribution lies in constructing a non-reductive, field-based cognitive framework that preserves subjective structure and phenomenological integrity, while drawing inspiration from the formal elegance of quantum field theory. Rather than seeking consciousness in physics, QTTC shows how the architecture of awareness can be molded through the language of quantum fields.

Other Attributes of QFT Applicable to QTTC

The UAF proposed in the QTTC is conceptualized as a timeless, non-local field—structurally analogous to the quantum vacuum in quantum field theory (QFT), unconstrained by spacetime geometry. This section explores how certain mathematical and physical principles from QFT, particularly those involving Hilbert space formalism, scalar field interactions, and operator dynamics, can illuminate the functional architecture of QTTC and the role of noëtons—its proposed units of structured awareness.

Awareness Beyond Spacetime Constraints

In QFT, Hilbert space represents the abstract vector space in which all possible states of a system reside (Zee, 2010). These state vectors need not correspond to physical positions or classical observables; instead, they encode possibilities. This allows QFT to operate independently of spacetime constraints when defining potential outcomes or transitions.

QTTC draws on this formalism to interpret awareness as existing in a space of potentiality, rather than in localized physical coordinates. Intentions and awareness states are conceptualized as vectors in this possibility space, and the UAF is understood as a pre-configurational field—one that shapes how subjective experience emerges before it is embedded in cognitive or neural substrates. In this view, awareness precedes localization, and the mind interfaces with this field through processes of intentional attention.

Interaction with Scalar Fields

In physics, scalar fields—such as the Higgs field—modulate the properties of particles and other fields by altering their mass, interaction strength, or potential energy (Weinberg, 1995). These scalar fields are described within Hilbert space using field operators that create or annihilate excitations at defined locations.

By analogy, QTTC posits that the UAF could interact with biological scalar fields—such as those produced by microtubules or DNA helices—not to generate awareness per se, but to modulate how awareness becomes structured. These biological substrates are not sources of awareness but act as informational gateways, shaping the resonance or alignment of field potentials. In this recursive relationship, awareness may alter the symmetry or energy landscape of cognitive fields, while biological configurations condition the formation of intentional patterns as the result of interaction with the UAF.

Creation and Integration of Noëtons

In QFT, virtual particles—such as particle–antiparticle pairs—can briefly emerge from the vacuum, perturb the field, and then annihilate without violating conservation laws (Peskin & Schroeder, 1995). This dynamic characterizes the field as active and fluctuating, even at the zero-point level.

QTTC applies this concept to noëtons, its proposed virtual quanta of awareness. Noëtons emerge during intentional attention as structured excitations of the UAF. When awareness shifts, these excitations do not disappear, but are reintegrated into the field's baseline potential. This process mirrors QFT's creation–annihilation

cycles, but with a critical distinction: what is conserved is structured possibility, not physical energy. Thus, QTTC proposes a conservation of subjective modulation within a dynamic awareness field.

The Individual as Operator

In Hilbert space, operators act on vectors to transform one state into another. Inner products between states represent overlaps, coherence, or transition amplitudes—central to how quantum systems evolve and interact.

QTTC metaphorically maps this structure onto individual cognitive activity:

- The transformation stage of TTC parallels the application of an operator, where raw perceptual or informational input becomes a subjectively meaningful experience.
- The post-transformation stage resembles taking an inner product between transformed awareness and an intentional self-structure—thus integrating the new experience into one's evolving identity or narrative.
- In QFT, as in broader quantum theory, the operator formalism relies on Hilbert space structures. Self-adjoint (Hermitian) operators—symmetric transformations that preserve inner products—provide a useful metaphor for the reciprocal relationship between awareness and volition. Just as these operators act consistently across the space of field states, in QTTC awareness modulates intention and intention recursively configures awareness—a cycle that sustains agency and coherence in conscious experience.

From Non-Local, Timeless Awareness to Temporal and Local Consciousness

The excitation of the Universal Awareness Field (UAF)—a timeless, selfless, and non-local field—gives rise to subjective experience. However, it is through the post-transformation stage of awareness that intentional mental activity becomes manifest. At this stage, QTTC formalizes the process as an interaction between the UAF and scalar fields, where the excitation becomes constrained by spacetime geometry. This interaction marks the transition from a non-local excitation to a localized, temporally-structured sense of agency. It is here that the abstract field of awareness localizes into the felt experience of "I"—an embodied, situated self that perceives itself within the bounds of time and space. In this view, consciousness emerges as a localized modulation of a non-local field, shaped through recursive interaction with physical substrates and scalar potentials.

In this framework, the mind is not a static structure, but a dynamic operator acting on a multi-dimensional space of possibilities. The interaction with the UAF is not viewed as a physical transfer of energy or information, but as a symbolic recursion—where biological and cognitive fields serve as modulators, and awareness configures meaning through recursive excitation and integration.

Implications

The QTTC introduces a novel conceptual framework that draws on the structural logic of QFT to provide a field-based architecture for understanding awareness, intention, and decision-making. Its implications extend across the philosophy of mind, cognitive science, and theoretical physics:

- **Reframing Awareness as Transformation, Not Emergence** QTTC challenges the conventional equivalence of awareness and consciousness, rejecting the notion that either is a byproduct of neural computation. Instead, it conceptualizes awareness as a transformation within a UAF—a precondition that gives rise to intention and the sense of agency, the tripartite components of consciousness. This provides a middle path between reductive materialism and metaphysical dualism.
- **Decision-Making as the Core of Conscious Process** Through constructs such as Awareness-Based Choice Selection (ABCS) and Discretionary Selection of Intelligence for Awareness (DSIA), QTTC emphasizes volitional modulation as a core process in consciousness, positioning it alongside awareness in shaping subjective experience.
- **Using Formalism of Quantum Structures** QTTC does not assert that quantum mechanics causes consciousness. Rather, it adopts key quantum principles—symmetry breaking, excitation and gauge fixing—as metaphorical tools for modeling the dynamic organization of subjective states and intentional modulation.

- **Reframing the Hard Problem** TTC does not attempt to resolve the Hard Problem in the traditional sense. Instead, it reframes it: the central question becomes not how matter produces qualia, but how structured awareness arises through field-like modulation and interfaces with biological systems to yield intention and identity.
- **A Bridge Across Disciplines** By employing a field-based, recursive framework, QTTC offers a common conceptual language that could unite physics, neuroscience, and philosophy, encouraging interdisciplinary dialogue without collapsing into speculative mysticism or reductive empiricism.

Limitations

QTTC, in its current form, is primarily a theoretical framework, and it acknowledges several important limitations:

- **Metaphorical, Not Empirical**

QTTC uses QFT as an abstract scaffold; concepts like the Universal Awareness Field (UAF) and noëtons are not proposed as empirical entities, but as structural metaphors to model awareness and cognitive transformation.

- **Lack of Testable Predictions**

While QTTC speculates on possible biological interfaces (e.g., microtubules, DNA), it currently lacks falsifiable hypotheses or testable mechanisms that meet contemporary scientific standards for empirical validation.

- **Terminological Ambiguity**

The quantum physics terms such as “field,” may be misinterpreted as literal claims in biology. Careful theoretical framing is essential to prevent confusion and maintain conceptual integrity.

- **Mathematical Incompleteness**

While QTTC remains conceptually rich by using several known concepts of QFT such as operators, inner products, and Hilbert space formalism, it remains mathematically underdeveloped. A full dynamical model, including governing equations of transformation, remains a key area for future development.

Future Directions

Despite its current status as a conceptual framework, the QTTC opens several promising avenues for theoretical development, interdisciplinary collaboration, and applied research. These future directions aim to deepen QTTC’s scientific rigor, extend its conceptual scope, and explore its relevance to both human cognition and artificial systems.

Formal Field Modeling

- Develop mathematical representations of field interactions to model how the Universal Awareness Field (UAF) could interface with scalar, tensor, or gauge fields.
- Define transformation equations for noëtons as structured excitations within Hilbert space.
- Explore analogs of Lagrangian or Hamiltonian formulations for the UAF, particularly in contexts where interaction with scalar fields (e.g., Higgs field) might parallel intentional modulation.

Biological Interface Exploration

- Investigate whether microtubules, DNA helices, or other biological structures exhibit field-resonant properties or non-local coherence signatures.
- Collaborate with researchers in quantum biology, biophotonics, and bioelectromagnetics to assess whether biological substrates could act as gateways for awareness-field interaction.
- Extend research on non-chemical distant cell communication (e.g., Farhadi et al.) to develop theoretical models of non-local signaling in living systems.
- Integration with Cognitive Science Models

- Compare QTTC's architecture with established models such as the Global Workspace Theory (GWT) and Integrated Information Theory (IIT) to identify convergences and divergences.
- Design phenomenological experiments that assess internal choice selection, meta-awareness, and subjective intentional modulation—potentially using introspective reports, neurophenomenology, or decision-tracking paradigms.

Applications in Artificial Intelligence

- Explore how mechanisms of awareness-based choice selection and discretionary attention modulation could inform next-generation AI systems.
- Investigate the potential analogs of ABCS and DSIA in artificial agents, and contrast these with the intrinsic volitional dynamics present in natural intelligence.
- Toward a Field-Based Cognitive Paradigm
- Lay the groundwork for a non-reductive cognitive science in which awareness is understood not as an emergent byproduct, but as a field dynamic integral to intentionality and agency.
- Use QTTC to formulate indirect hypotheses—such as intentional resonance patterns or non-local decision influences—which may inspire new experimental paradigms in neuroscience or psychology.

Toward a Field-Based Cognitive Paradigm

- Lay the groundwork for a non-reductive cognitive science in which awareness is understood not as an emergent byproduct, but as a field dynamic integral to intentionality and agency.
- Use QTTC to formulate indirect hypotheses—such as intentional resonance patterns or non-local decision influences—which may inspire new experimental paradigms in neuroscience or psychology.
- Ethical and Existential Implications
- If awareness is a participatory field structure rather than a private computation, then every act of attention or volition may carry ontological significance.
- This perspective could support richer frameworks for ethics, creativity, empathy, and intersubjectivity, grounded in the relational dynamics of field interaction rather than in abstract symbolic logic or purely computational models.

Conclusion

The Quantum Trilogy Theory of Consciousness (QTTC) introduces a novel framework for understanding consciousness as a structured, field-based process. Drawing on the formal architecture of quantum field theory (QFT), QTTC reconceptualizes awareness as a universal field from which subjective experience emerges through stages of selection, transformation, and volition.

Rather than treating consciousness as a computational byproduct or a metaphysical anomaly, QTTC frames it as a dynamic modulation of awareness—modeled through structural analogies such as symmetry breaking, gauge fixing, and quantized excitation. These concepts, though metaphorical, provide interdisciplinary tools for modeling the emergence of conscious experience.

At its core, QTTC reframes the Hard Problem of Consciousness—not as a question of how physical systems generate qualia, but as an inquiry into how a structured, timeless, non-local, and selfless awareness becomes a temporal, local, and self-referential consciousness. This transformation yields intentional mental activity and the attribution of meaning through recursive interactions within the field framework.

While still conceptual and mathematically undeveloped, QTTC offers a theoretical bridge between physics, cognitive science, and phenomenology. By presenting volition and identity as field-based transformations rather than emergent computations, it opens new avenues for both theoretical exploration and empirical investigation—without reverting to dualism or reductionism.

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