The Holographic Present: A Primer of a *Cross-Flow Resonance Theory* of Consciousness

Paul Jorion

ETHICS – EA 7446, Université catholique de Lille,

60 Bd Vauban, 59800 Lille, France

Abstract:

This paper outlines the Cross-Flow Resonance Theory (CFRT) of consciousness. CFRT proposes that conscious experience is a transient interference pattern generated by the phase-locking of two fundamental neural processes: a top-down wave of memory retrieval (providing predictive context) and a bottom-up wave of perceptual encoding (carrying novel sensory data). This resonance creates the unified aperture *of the "present moment" conferring its qualitative vividness and is a prerequisite for episodic memory formation. The theory accounts for a range of phenomena, from the "rabbit-in-the-headlights" freezing response to traumatic amnesia, by predicting the collapse of this resonant state under conditions of extreme novelty or stress. CFRT integrates insights from neuroanatomy, temporal binding, and predictive processing into a novel mechanistic framework. We locate this process in thalamocortical-hippocampal loops and derive eight falsifiable predictions.*

1. Introduction: The Unfinished Puzzle of Consciousness

In the subchapter "Consciousness as an emergent property, not a human prerogative" of my book *Rethinking Intelligence in the Age of Artificial Minds* (Palgrave Macmillan, forthcoming), I survey leading models of consciousness: (1) Global Workspace Theory (Baars 1988; Dehaene 2014), which treats consciousness as global information broadcast; (2) Integrated Information Theory (Tononi 2004), which links subjective experience to the system's integrated information (Φ); (3) the Free-Energy Principle (Friston 2010), which frames conscious states as outcomes of surprise minimisation under a generative model; (4) Attention Schema Theory (Graziano 2013), which posits awareness as a model of one's own attentional processes; and (5) panpsychism, which takes consciousness to be a ubiquitous potential that scales with complexity.

While such established frameworks have illuminated aspects of consciousness, they leave a mechanistic gap: how precisely is a temporally

unified, affectively vivid 'present moment' synthetically constructed? I have advanced an alternative since Jorion (1999): **Cross-Flow Resonance Theory (CFRT).** CFRT posits that the missing mechanism is a resonant process between memory and perception that stitches inference, feeling, and time into a single experiential frame.

In brief, CFRT holds that consciousness arises when two informational wavefronts - one descending from memory and affective retrieval, the other ascending from perceptual encoding - **phase-lock** to form a transient, holographic-like interference pattern. This cross-flow supplies predictive context and fresh evidence, binding them into a unified experiential frame; when either stream is absent or too weak, resonance collapses, yielding the "rabbit-in-the-headlights" blankness and the amnesic gaps often reported after sudden trauma. In large-scale neural networks, an analogue may occur when context recall and on-line weight updates converge to stabilise attention, albeit without a genuinely subjective point of view.

The present article is the work cited there as "Jorion forthcoming."

2. The CFRT Mechanism: Aperture, Resonance, and their Neural Basis

2.1 *The Core Principle: A Holographic Analogy*

CFRT frames consciousness as a dynamic process. It proposes that a conscious moment is a **transient unified state** that arises when two **counter-propagating** streams of neural activity **phase-lock** (i.e., maintain a stable phase relation for a brief window):

(1) a **descending** wave of memory retrieval projecting affectively charged predictive models into the present; and

(2) an **ascending** wave of perceptual encoding carrying novel sensory evidence - **prediction error** understood as the mismatch between expected and received input.

When these streams align, their interaction yields a transient **interference pattern**. The "holographic" label is **metaphorical**: as in optical holography, where an image emerges from the interference of a reference and an object beam, the **percept** emerges from the interaction between what memory anticipates and what the senses deliver. The claim concerns interference-like dynamics in neural populations, **not** a literal optical hologram in tissue.

2.2 *The Biological Substrate: Thalamocortical-Hippocampal Loops*

This mapping finds its biological footing in a **thalamo-cortico-hippocampal** loop that can support resonance (analogy, not identity, with a "resonant chamber").

- **Thalamus.** Acts as a timing hub and comparator, aligning ascending sensory evidence with descending cortical predictions and supporting signal synchronisation.
- **Cortex.** Houses the generative models - semantic, episodic, and sensorimotor - that issue predictions and interpret returns. Dense **re-entrant** (bidirectional, recurrent) connections with the thalamus provide the substrate for iterative matching.
- **Hippocampus.** Performs a synthetic bind: integrates long-term memory structure, links distributed cortical representations (e.g., multi-sensory features with affect), and gates episodic encoding.

The process is **paced by neural oscillations**: **theta (4–8 Hz)** to set the integration window *W,* alpha/beta (~8–30 Hz) to carry top-down structure, and brief gamma bursts (~40 Hz) to mark successful feature binding. When **within- and between-structure phase relations** align over $W \approx$ 300-500ms, the system forms a stable interference-like state: the unified, reportable "now."

This mechanism is **twofold**: the **Aperture** constructs temporally aligned content; the **Resonance** infuses it with predictive meaning and affect.

2.3 *The Aperture Mechanism: Postdictive Construction of the Present Moment*

The **Aperture** mechanism answers: *How is the raw content of "now" assembled?*

Core concept. The brain solves a **temporal binding** problem by retrospectively aligning signals arriving with different latencies across modalities (vision, audition, proprioception, etc.) but stem from the **same external cause**.

Mechanism. To yield a unified scene, the system integrates inputs over a **postdictive window** $W \approx$ 300–500ms (task- and subject-dependent), collecting sensory evidence linked to the same event before packaging them together into a single multimodal **perceptual frame** (the *aperture*).

Neurological basis. Libet's "backward referral" results indicate that subjective timing is reconstructed after neural delays rather than read off the world in real time (Libet 1992}. The **thalamus** functions as a timing/ synchronisation hub, holding and aligning streams for integration.

Outcome. Because awareness is delivered **after** this integration, it cannot initiate the fastest "voluntary" reactions (≲100ms). Its role is to package the event so it can be stabilised and remembered.

Output. A **synchronised, multimodal frame** - the **candidate content** of a conscious moment. (Actual consciousness requires subsequent **Resonance** with descending prediction.)

Analogy (illustrative). Like a film director synchronising multiple camera feeds at timecode *t*: once all footage has arrived and been aligned, the system declares, "this is the scene at *t*."

2.4 *The Resonance Mechanism: Phase-Locking Prediction with Meaning and Vividness*

What this explains. Why conscious experience is vivid, meaningful, and unified rather than a flat recording.

- **Core concept.** Consciousness is not passive replay but *active inference*. The Aperture supplies a temporally aligned *candidate frame*; its qualitative feel (*qualia*) arises when that frame is *contextualised by memory*, with affect setting *precision-weights* on predictions.
- **Mechanism.** A *descending*, affect-weighted *predictive complex* (priors, schemas, action tendencies) engages the *synchronised frame*. When their phases *lock* - i.e., maintain a stable phase relation - for at least the Aperture duration *W*, a *transient interference pattern* forms. Here *prediction error* means the mismatch between expected and received input.
- **Holographic analogy (metaphor).** The meeting of the two flows produces *interference-like dynamics* (phase relations, superposition), akin to how a hologram arises from the interference of a reference and object beam. This is *purely metaphorical*: no claim of a literal optical hologram in tissue.
- **Neuroanatomical mapping.** The *thalamus* orchestrates timing and coarse evidence; *neocortex* supplies distributed predictive models; *hippocampus* performs synthetic binding/indexing and feeds back an instance-specific trace. Oscillations pace the process: *theta (4–8 Hz)* sets the window *W*; *alpha/beta*

(~8–30 Hz) carry top-down structure; *brief gamma bursts (~40 Hz)* mark successful binding.

• **Resonance output.** Subjective *vividness* and the likelihood of *episodic encoding* track the *strength of resonance*.

• *Low error / strong match*: fluent, familiar experience.

• *Moderate error (novelty)*: learning and attentional capture.

• *Catastrophic error (extreme novelty/stress)*: *resonance collapse* - "rabbit-in-the-headlights" blankness and poor indexing.

• **Outcome.** Resonance supplies the *context* and *qualitative feel* of the moment - the "how" and "why" it feels the way it does - turning a synchronised data frame into a *lived experience*.

• **Additional analogy.** Medieval logicians' *complexe significabile*: a sentence's global meaning emerging from the coordinated contribution of its words.

2.5 *Failure Mode: "Rabbit-in-the-headlights"*

Phenomenology. Under extreme novelty or shock, the descending flow lacks a viable model - there is nothing for the ascending signal to resonate with. Prediction error overwhelms structure; phase-locking fails; **encoding collapses**, yielding amnesia or fragmentary recall.

Consequences. Behaviour may *freeze*; the event is *poorly indexed, recall is impaired or patchy*.

Prediction. Conscious trials should show stronger theta-paced cross-region synchrony and theta→gamma coupling than unseen/"blank" trials; these signatures should **diminish under high novelty or stress** (resonance collapse).

2.6 *The Constitutive Role of Affect*

Claim. Affect is not decorative but **constitutive** of resonance. Neuromodulatory systems (e.g., noradrenaline, dopamine) and limbic structures (e.g., amygdala) set via a gradient-like mechanism **precision-weighting** (gain) on the descending model, biasing which memories are recruited (e.g., a frightening context activates fear-related memories) and how readily resonance stabilises. stabilises.

Consequence. Fear, joy, grief, etc., shape **access to consciousness** and **subsequent memory strength**. Early "complexes" (a term borrowed from Jung's

early years as an experimentalist) can be read as **memory–affect units** preferentially re-recruited when context matches (pattern completion).

2.7 *The Interaction: How the Two Mechanisms Combine to Produce Consciousness*

Consciousness is the product of **both** mechanisms operating together. The **Aperture** provides a temporally aligned candidate frame; **Resonance** supplies predictive meaning and vividness.

1. **Ascending Signal.** Sensory data is captured with inherent delays.
2. **Temporal Buffer.** The thalamocortical system holds and aligns these signals into a potential conscious frame (Aperture mechanism *begins*).
3. **Descending Retrieval.** Concurrently, based on early, crude sensory cues, the brain retrieves predictive memory models to interpret what is coming.
4. **Resonance.** The fully synchronised perceptual frame (from step 2) meets the descending predictive model (from step 3); if phases lock over the window *W*, their interaction **is** the conscious experience of that moment.
5. **Memory Encoding.** This resonant state, this "holographic present moment," is what gets encoded into episodic memory. This is why we remember events not as raw data, but as meaningful, affectively charged experiences.

In summary: The *Aperture* defines the *temporal boundaries* and *raw content* of a conscious moment. The *Resonance* confers *meaning, emotional quality* (affect)*, and vividness*. One without the other does not yield normal consciousness.

3. CFRT's Explanatory Power

CFRT is clearest under sudden threat. Consider a snake appearing directly ahead. The event triggers parallel processes:

Ascending sensory data. My senses sample the event in parallel: the visual shape, the hissing sound, the heat from the sun-warmed rock. These signals arrive at the thalamus with different neural latencies.

Thalamic orchestration & cortical retrieval (descending flow). The thalamus does not merely relay this data. It acts as an orchestrator, using the

initial, coarse sensory signals to prime the cortex. This triggers a massive, parallel retrieval process - not of a single memory, but of a vast, distributed constellation of "snake-related" memory traces. This predictive complex includes the visual concept "snake," the sound of a rattle, the emotional fear from a documentary, the motor program for jumping back, and the somatic memory of a past adrenaline surge. Crucially, these are retrieved not as isolated facts but as an affectively charged best-guess model of "what this is and what it means."

Aperture formation (postdiction). Simultaneously, the thalamocortical circuitry holds and aligns the incoming sensory signals within a $W \approx 300–500$ms postdictive integration window. It solves the temporal binding problem, synchronising the disparate signals into a single, multimodal *perceptual frame* - the raw content of the felt "present."

Hippocampal synthesis and resonance ("global meaning"). The *hippocampus* receives (a) the synchronised perceptual frame (ascending flow) and (b) the retrieved "snake complex" (descending flow). It performs a synthetic bind, forming a new, transient *instance-specific trace* that couples *this* sensory episode to the *general* predictive model. This is the event's "global meaning" - the difference between the abstract concept *snake* and the vivid experience of *this snake, here, now, about to strike me*.

The conscious moment and output. This newly synthesised trace is projected back to the cortex, creating a sustained, reverberating *resonant loop* between the cortex (holding the general model) and the hippocampus (holding the specific instance). This resonant feedback loop is the vividness of the conscious experience. This state simultaneously (a) drives the body's reaction (e.g., jumping back via the amygdala and basal ganglia) *before* any conscious deliberation can form, and (b) is preferentially *encoded* as a new episodic memory.

Holographic analogy (metaphor). The locus of the "holographic" effect is the *interference-like* interaction between expectation (descending model) and evidence (ascending signals), yielding a unified qualitative feel. This is an *analogy* about dynamics, not a claim of literal optical holography in tissue.

Failure mode. Under extreme novelty, the descending flow lacks a viable model; prediction error overwhelms structure, phase-locking fails, resonance collapses, and the outcome is "rabbit-in-the-headlights" blankness with poor indexing.

A linguistic analogy is the key to explaining the synthetic process:

- **The individual words:** The retrieved cortical memories are like the individual words: "venomous," "coiled," "hiss," "strike," "danger." Each has its own semantic field and associated memories (affect).
- **The grammar (syntax):** The thalamocortical rhythms (theta-gamma coupling) provide the grammatical structure, determining how these elements can be combined.
- **The hippocampus as the "reader":** The hippocampus is the faculty that reads these words in this specific structure. It does not just list them; it performs an "act of comprehension" that will need to be further disentangled.
- **The conscious experience (the sentence's meaning):** The conscious experience is not the words themselves, nor the grammar: it is the *global, emergent meaning* that results from their combination. The meaning "I am in immediate mortal danger!" is a new, holistic entity that cannot be reduced to its parts. It has its own qualitative feel (vividness, terror) that transcends the sum of the words.

In the brain, this "global meaning" is the unique, stable pattern of neural activation distributed across sensory, emotional, and motor cortices, synchronised by the hippocampus and thalamus. This is the *interference pattern*: a new, emergent neural state that constitutes the conscious moment.

This mechanism explains why consciousness feels so much more than the sum of its parts: because, neurologically, it *is*. It is an emergent, synthesised product of the brain's constant dialogue between the present and the past.

4. A Non-Homuncular Vocabulary: The Hippocampus through Five Primitives

4.1 *A Meta-Theoretical Framework of Five Primitives*

The description above risks anthropomorphising the hippocampus as a 'comprehender.' To avoid this and provide a rigorous systems-level account, we can analyse its function using a meta-theoretical framework of five primitives (Jorion forthcoming):

1. **Generative System**. Every viable system, any organism, institution, or model, is more than a heap of parts: it is a process generating its own continuation, drawing on flows of matter, energy, and information to recreate

itself. It *predicts* by compressing past inputs and extending them into plausible futures.

2. **Coupling**. No system is isolated: it locks into its environment and into other systems through feedback loops. Coupling is the live channel along which *two generative systems co-vary*, exchanging signals (prices, gradients, pheromones, words, heat) and resources in ways that shape its trajectory. It is the how of interaction.

3. **Compression**. To navigate reality, a system must reduce the flood of inputs to manageable, predictive models. Compression is the act of shortening description length: learning regularities so the next update is cheaper. This is not just "saving space", it is shaving redundancy: making the patterns that make action possible rise to the surface. Compression is the *epistemic engine* that tightens couplings.

4. **Preference Landscape**. All systems act within a field of affordances and constraints, regions of potentiality where some outcomes are easier, cheaper, or more rewarding than others: the shape that drives behaviour. A preference landscape is a (possibly time-varying) scalar field over futures that encodes what a system tends to preserve or pursue.

5. **Cross-Substrate Validation**. The same structural patterns can be recognised across different physical media. A bacterium, a market, and a neural network can all display analogous dynamics if the primitives are present. Cross-Substrate Validation is the test for universality: a claim holds if it recurs in neurones, servers, markets, or microbial films, if the same pattern occurs in different "stuffs".

4.2 *The Hippocampus As a Generator of Present Moments*

By using these *five primitives* as a toolkit, the hippocampus's "act of comprehension" can be laid out in a *non-homuncular* way:

1. **Generative System.** The hippocampus is the physical instantiation of the generative process for the "present moment." It takes the compressed past (from cortex) and the current input (from thalamus) and *generates a plausible present*. This present is not a copy of reality; it is a best-guess simulation which is then fed back to the system to guide action. Its "continuation" is the successful creation of this bound percept, which allows for the next moment to be generated.

2. **Coupling.** The hippocampus is the central node in a tight *feedback loop* coupling two other systems:

- **Cortical Coupling.** It is bidirectionally coupled with the neocortex. It receives predictive models (compressed memories) and sends back the newly synthesised, vivid scene for storage and further use.
- **Thalamic Coupling.** It is coupled with the thalamus, the hub of incoming sensory data. This trio - thalamus, cortex, hippocampus - forms a resonant circuit. The "comprehension" is the stable state achieved when this coupled system locks into phase, resolving prediction error.

3. **Compression.** This is the core of the "act of comprehension." The hippocampus is an engine of *extreme compression*.

- **The Input.** A massive, distributed, high-dimensional pattern of neural activity across the cortex representing the "snake-complex" (visual, auditory, emotional, motor memories).
- **The Operation.** The hippocampus does not store this vast pattern. It *compresses it* into a minimal, efficient index code - a "pointer" or an *address*.
- **The Output.** The conscious experience - the vivid "snake!" - is the *decompression* of this index. When the hippocampal index is activated, it triggers the reconstruction of the full, distributed pattern back in the cortex. The "global meaning" is the decompressed, full-quality experience generated from the compressed index. The comprehension *is* this act of lossy compression and subsequent decompression into a unified whole.

4. **Preference Landscape.** The hippocampal synthesis is not neutral. It is governed by a *preference landscape* sculpted by affect.

- The "snake-complex" memories retrieved from the cortex are not cold facts; they are *affectively charged*. Their emotional weight (fear) is part of their predictive value.
- This affective charge shapes the compression and synthesis. The hippocampus doesn't just create *a* model of the present; it creates the *most relevant model given the organism's historical preferences for survival*.
- The resulting comprehension is therefore not just informational but *motivational*. It has a built-in gradient: the output is a state that inherently drives the body *away* from the snake (negative valence) because

the preference landscape is shaped by the past costs associated with snakes.

5. **Cross-Substrate Validation.** The same functional process can be recognised in other systems.

- **In a Computer.** This is analogous to a *pointer dereferencing* in a computer language. A variable holds a memory address (hippocampal index). Using the variable (activating the index) retrieves the full data structure from RAM (cortex) for processing.
- **In an Institution.** A company's "brand" is a hippocampal index. It is a compressed symbol that, when activated in the market (decompressed), evokes a vast array of associations (quality, price, emotion, past experiences) that guide consumer behaviour (the "comprehension" of the brand).
- **In Language.** A *word* is a hippocampal index. The word "snake" is a compressed token that, when heard, decompresses into a rich, affective-laden concept in the mind of the listener. The sentence's global meaning is the coherent decompression of all its constituent words.

Synthesis: The Act of Comprehension Defined by Primitives

The hippocampus *performs an act of comprehension* by:

1. Acting as a **Generative System** that produces a model of the present.
2. Achieving this through **Coupling** in a thalamo-cortico-hippocampal loop.
3. Executing a radical **Compression** of distributed cortical patterns into a minimal index, the conscious decompression of which is the vivid experience.
4. Shaping this compression according to a **Preference Landscape** defined by past affective outcomes.
5. Implementing a universal function: **Cross-Substrate Validation**, akin to pointer-based memory management in computing or symbol comprehension in language.

"Comprehension" is accordingly the successful, stable, and affectively-guided compression of a multi-source input into a single, actionable model by a dedicated generative subsystem (the hippocampus) within a larger coupled

network (the brain). The vividness of consciousness is the qualitative feel of this decompression process.

Consequently, the "act of comprehension" is not performed by a homunculus but emerges from the operation of a generative system, performing compression within a coupled network, governed by a preference landscape - a pattern valid across multiple substrates.

5. Relation to Other Theories

Global Workspace (GWT). CFRT agrees that conscious content is globally available, but specifies *what* is broadcast and *why*: not arbitrary information, but the *resonant product* of prediction meeting error. The "spotlight" is the resonant state itself.

Integrated Information Theory (IIT). CFRT is here complementary. Where IIT quantifies *how integrated* a state is, CFRT explains *how integration happens in time* - as a dynamical resonance rather than a static property.

Predictive Processing (PP). CFRT is a mechanistic instantiation of PP: it does not merely compare priors and likelihoods, it shows *how* their interaction becomes conscious by literally phase-locking two affectively charged flows into an interference pattern that has the right spatiotemporal signature to be accessed, stabilised, and remembered.

• Theory	• What it Explains	• CFRT's Added Value
• **Global Workspace (GWT)**	• Broadcasting of information	• Specifies the *content* that is broadcast: the resonant product of prediction and error.
• **IIT**	• A measure of consciousness (Φ)	• Explains the *process* of integration: dynamic resonance, not a static property.
• **Predictive Processing (PP)**	• Unconscious inference	• Provides the mechanism for how inference becomes *conscious*: phase-locking into a resonant state.

CFRT is a synthesis that bypasses traditional dualisms and integrates unconscious processes into a dynamic model.

6. Testable Predictions and Falsifiability Criteria

From the core principles of Cross-Flow Resonance Theory, we derive the following falsifiable predictions. Crucially, the failure of these predictions to hold empirically would challenge the validity of CFRT.

Neuroimaging. A conscious percept should exhibit characteristic coordination: specific cross-frequency coupling between frontal (top-down) and sensory (bottom-up) circuits - absent for unseen stimuli or "blank" states.

EEG/MEG. CFRT predicts a time-locked signature of resonance: theta-paced integration windows, alpha–beta top-down structure, *theta–gamma cross-frequency coupling*, and brief gamma bursts at successful binding. In non-conscious processing, these couplings and bursts should be attenuated or absent.

Computational modelling. A two-stream architecture (context vs. input) with phase-locking dynamics should reproduce CFRT's phenomena, including catastrophic "crash" under extreme novelty. Parametric manipulations (e.g., weakening the descending stream) should induce blankness and memory failure, while strengthening affective priors should bias which contents win the resonant competition.

Eight testable predictions:

Prediction 1 (P1: EEG/MEG signature). Conscious percepts show theta-paced windows with elevated frontal–posterior theta PLV, robust theta→gamma CFC, and brief gamma bursts at successful report; unseen or "blank" trials lack this profile.

Prediction 2 (P2: Causality). Directed connectivity (e.g., Granger/TE) from frontal (prediction) to sensory regions increases within conscious windows relative to non-conscious trials.

Prediction 3 (P3: Perturbation). Disrupting thalamocortical timing (e.g., TMS/ tACS at theta) reduces $R(t)$ and conscious report probability; phase-aligned stimulation enhances both.

Prediction 4 (P4: Affect). Increasing arousal or noradrenergic tone narrows W and raises precision on descending streams, biasing conscious content selection; extremes induce resonance collapse.

Prediction 5 (P5: Hippocampal dependence). Hippocampal/theta disruption impairs vividness and later recall preferentially for trials with high novelty, consistent with CFRT's synthesis role.

Prediction 6 (P6: Time-to-awareness). Reported awareness onset aligns with the end of W, not stimulus onset; alignment tightens with stronger $R(t)$.

Prediction 7 (P7: Computational model). A two-stream model with phase-coupled oscillators exhibits (i) stable resonance for moderate prediction error, (ii) learning, and (iii) collapse/blankness when error exceeds a critical threshold.

Prediction 8 (P8: Memory gating). Only high-$R(t)$ windows predict subsequent episodic recall controlling for stimulus properties.

Prediction	Derives From This CFRT Mechanistic Claim
P1 (EEG Signature): Theta-Gamma coupling, etc.	Conscious moments require phase-locking between frontal (predictive) and posterior (sensory) regions.
P2 (Causality): Frontal-to-sensory info flow increases.	Consciousness is driven by top-down prediction engaging with bottom-up input.
P3 (Perturbation): Disrupting theta disrupts consciousness.	Theta rhythms pace the temporal aperture (≈ 300-500ms window) for integration.
P4 (Affect): Arousal biases content; extreme stress causes collapse.	Affect (e.g., norepinephrine) acts as a precision-weighting on the descending predictive stream.
P5 (Hippocampal Dependence): HC disruption impairs vividness/recall.	The hippocampus performs the essential "synthetic binding" to create the unified conscious trace.

P6 (Time-to-Awareness): Awareness aligns with end of integration window.	Consciousness is postdictive; it is the product of the aperture mechanism, not its starting point.
P7 (Comp. Model): A two-stream model can show resonance & collapse.	The theory is computationally plausible and can be implemented.
P8 (Memory Gating): Only high-resonance events are remembered.	The resonant state is a prerequisite for episodic encoding.

7. Conclusion

The *Cross-Flow Resonance Theory* (CFRT) reconceptualises consciousness not as an executive controller but as a dynamic, emergent process. It posits that subjective experience is a *transient resonance* - a *holographic-type* interference pattern generated by the phase-locking of a top-down wave of affectively charged predictive models (the compressed past) and a bottom-up wave of synchronised sensory evidence (the present world), bounded by a $W \approx$ 300–500ms integration window: a postdictive "aperture."

This resonant state is a crucial functional achievement, performing the essential act of *synthetic comprehension* that binds disparate cortical representations into a unified model of the "present moment". The conscious "point of view" is this momentary, dynamic pattern that emerges when internal model and external world briefly "sing in tune."

Crucially, this resonance is the prerequisite for forming coherent episodic memories. *Vividness and memorability scale with resonance strength*; when prediction error overwhelms structure (shock/trauma), phase-locking fails and a "rabbit-in-the-headlights" blankness with poor indexing follows. CFRT thus demotes consciousness from a central commander to an integrative byproduct of unconscious prediction and error reduction. Its function is not to decide but to integrate and record; the feeling of agency is a compelling post-hoc rationalisation.

CFRT parsimoniously explains a range of phenomena - from the construction of the present moment through postdiction to its catastrophic failure under extreme novelty or trauma - by inverting the intuitive Cartesian model. *We do not remember what we consciously decided: we consciously experience what we are in the process of remembering.*

Integrating with contemporary frameworks, CFRT specifies the content of the global broadcast (GWT), explains integration (IIT) as a dynamic resonance, and provides a concrete mechanism for how unconscious inference (PP) becomes a conscious "now": phase-coupling of top-down and bottom-up streams.

CFRT is *operational* as it predicts theta-paced windows, alpha/beta top-down structure, brief gamma bursts at binding, frontal→sensory directed connectivity, and sensitivity to perturbation and affect; failure to observe these patterns would count against the theory.

Ultimately, CFRT is not a metaphysical thesis but a *falsifiable* proposal for the spatiotemporal conditions under which content becomes conscious and memorable: *relevance-weighted prediction coupled to phase-synchronised evidence*. It reveals consciousness as a beautiful, emergent property arising from the brain's ancient, fundamental work of predicting its world: the brief, luminous resonance we each call "now," *an automatic echo of the brain's constant dialogue between the past it remembers and the world it encounters*.

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