

The Intersubjective Contemplative Experiment (ICE): A Neuro-Phenomenological Framework for Investigating Shared Experience via Pure Intentionality

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Abstract

Background: The study of shared subjective experience, or intersubjectivity, represents a significant challenge for traditional single-brain neuroscience. The recent emergence of second-person methodologies, particularly hyperscanning, has enabled the measurement of Inter-brain Synchronization (IBS) as a neural correlate of social connection, yet most paradigms confound shared intentionality with shared sensory and motor cues.

Objective: This paper introduces the Intersubjective Contemplative Experiment (ICE) as a novel, non-physical, remote paradigm designed to isolate and investigate IBS driven purely by shared intentionality. The ICE is presented as an extreme test case for the principle that shared mental goals, stripped of all other confounding variables, can induce robust neural coupling between individuals.

Framework: A comprehensive neuro-phenomenological framework is proposed to ground the ICE in established scientific principles. This framework posits that the ICE leverages empathy-modulated IBS as its core mechanism and interprets its phenomenological outputs through a neuro-semiotic lens, connecting subjective reports to the activation of specific neural systems.

Methodology & Ethics: The paper details the two-stage ICE protocol, comprising (1) Meditative Cooperation to establish a baseline of affective resonance and (2) Directed Visualization to engage a shared, top-down cognitive goal. A bespoke ethical framework is introduced, centered on the principles of Epistemic Respect, Voluntary Intersubjective Participation, and Symbolic Anonymity, which are argued to be epistemological necessities for generating valid data within this paradigm.

Results & Implications: The high degree of "semantic convergence" reported in preliminary investigations is re-interpreted as "induced cognitive isomorphism," a predictable consequence of the cognitive constraints imposed by high-fidelity IBS. The symbolic data produced are shown to have high face validity, with a neuro-semiotic analysis grounding them in the plausible activation of targeted sensory and cognitive networks.

Conclusion & Future Direction: The ICE is presented as a scientifically tractable and ethically sound research program for the empirical study of shared consciousness. To move this paradigm from theory to practice, a concrete roadmap for empirical validation is proposed, centered on a dual-Electroencephalography (EEG) hyperscanning study designed to test the core, falsifiable hypothesis that the ICE protocol induces measurable IBS that correlates with reported semantic convergence.

1. Introduction

1.1 The Challenge of Intersubjectivity: From Single Brains to Dyadic Resonance

For much of its history, cognitive neuroscience has operated under a single-brain paradigm, examining neural processes within an individual who is often socially isolated and responding to pre-programmed stimuli.¹ While this approach has yielded profound insights into the brain's internal architecture, it is fundamentally limited in its capacity to illuminate the neural underpinnings of social interaction—a process that is, by its nature, dynamic, reciprocal, and

distributed across multiple individuals. Human social life unfolds not in isolation but through continuous mutual adaptation, where each partner modifies their actions in response to the ever-changing behavior of the other.² To understand the complexities of phenomena like cooperation, communication, and empathy, it is necessary to move beyond the study of a single brain observing a social world and toward the study of multiple brains co-creating a shared social reality.¹

This recognition has catalyzed a methodological shift toward a "second-person neuroscience".¹ This approach emphasizes that to truly understand brain function during social engagement, the experimental setting must capture the complexity and reciprocity of real-life interactions.⁴ The fundamental unit of analysis must expand from the individual to the dyad or group.⁴ This conceptual evolution has been enabled by a critical technological advance: hyperscanning, the simultaneous recording of brain activity from two or more interacting individuals.² Using techniques such as dual-Electroencephalography (EEG), functional Near-Infrared Spectroscopy (fNIRS), or functional Magnetic Resonance Imaging (fMRI), hyperscanning allows researchers to investigate not only the activity within each brain (intra-brain dynamics) but also the dynamic coupling between them (inter-brain dynamics).³ This opens a direct empirical window into the neural basis of intersubjectivity.

1.2 Inter-brain Synchronization (IBS) as a Neural Correlate of Social Connection

The central phenomenon investigated through hyperscanning is Inter-brain Synchronization (IBS), the quantifiable coupling or synchronization of neural oscillations between individuals during social interaction.⁵ Far from a speculative concept, IBS has been established as a robust and reliable neurophysiological marker of interpersonal engagement.⁵ An extensive body of literature demonstrates that the degree of IBS between individuals increases during successful social processes, including effective teamwork, cooperation, joint attention, communication, and the formation of social bonds.⁵ A meta-analysis of thirteen hyperscanning studies confirmed statistically significant IBS during cooperative behavior, with large effect sizes observed in frontal and temporoparietal brain areas.¹

This synchronization is not a monolithic phenomenon but manifests in specific neural frequency bands, each associated with distinct cognitive functions in social contexts⁵:

- **Theta band (4–7 Hz):** Often linked to cognitive control and memory processes during social tasks.
- **Alpha band (8–12 Hz):** Associated with attentional processes, social coordination, and the activity of the mirror neuron system.

- **Beta band (13–30 Hz):** Implicated in motor resonance and higher-level cognitive empathy, reflecting the matching of more complex mental states.

The consistent observation of IBS across diverse cooperative tasks and its correlation with behavioral success suggest that it is a fundamental neural mechanism for aligning the internal states of interacting individuals, facilitating the coordination of their actions and mental representations to achieve shared goals.¹

1.3 The Research Gap: The Primacy of Shared Intentionality

While the link between social interaction and IBS is well-established, the majority of existing hyperscanning studies investigate joint actions that involve shared sensory input, coordinated motor output, or both.⁴ Participants may play a card game, engage in imitative hand movements, or coordinate their actions on a computer screen.² In such paradigms, it is difficult to disentangle the effects of shared intentionality—the alignment of goals and mental states—from the effects of two individuals simply perceiving the same stimuli or performing similar actions. The observed neural coupling could be a byproduct of shared sensorimotor processing rather than a direct reflection of a deeper intersubjective connection.

A critical piece of evidence, however, points toward the primacy of shared intention. Research has shown that IBS in the superior frontal cortex increases significantly during cooperative tasks but not during competitive ones, even when the motor actions performed by the participants are more closely matched in the competitive scenario.⁵ This finding is profound because it decouples IBS from the necessity of shared physical action or mimicry. It demonstrates that IBS is not merely tracking the similarity of external behaviors but rather a deeper level of "social intention" or shared intentionality—the active process of two minds aligning to achieve a mutual goal.

This suggests that shared intentionality itself is a powerful, perhaps primary, driver of neural coupling. This, in turn, exposes a crucial gap in the existing literature: no experimental paradigm has been designed to *completely isolate* this intentional component. A paradigm that systematically removes all shared sensory input, all coordinated motor action, and even the physical co-presence of the participants would provide the ultimate test of whether shared intentionality alone is sufficient to induce and sustain robust inter-brain coupling. Such an experiment would move beyond studying brains that are physically interacting with each other or a shared environment, to studying brains that are interacting purely within a shared, internally-generated mental space.

1.4 Thesis: Proposing the Intersubjective Contemplative Experiment (ICE)

This paper introduces the **Intersubjective Contemplative Experiment (ICE)** as a novel research paradigm designed to address this fundamental gap. The ICE is formally defined as: *A structured protocol that uses contemplative or imaginative techniques to induce a shared, resonant subjective state between two or more individuals for the purpose of observing its phenomenological and symbolic correlates.*⁵

The ICE protocol is entirely non-physical and remote, meaning it cannot rely on motor mimicry or shared sensory input to generate synchrony. It is therefore an extreme test case of the principle of intentionality-driven neural coupling. The purpose of this paper is to provide a comprehensive theoretical and methodological framework for this new paradigm. This will be accomplished through four key objectives:

1. To establish a robust neurobiological foundation for the ICE, grounding it in the established literature on Inter-brain Synchronization and the neuroscience of empathy.
2. To formally define the ICE protocol, its unique epistemological status, and a bespoke ethical framework essential for its implementation.
3. To provide a neuro-semiotic analysis of preliminary phenomenological data, demonstrating how the symbolic outputs of the ICE can be interpreted as plausible reports arising from the targeted activation of specific neural systems.
4. To propose a concrete and falsifiable roadmap for the empirical validation of the ICE's core claims using a dual-EEG hyperscanning study.

By translating a speculative methodology into a scientifically tractable and ethically sound research program, this paper aims to open a legitimate, albeit challenging, new frontier for the empirical investigation of shared human consciousness.

2. A Neurobiological Framework for Intersubjective Resonance

To move the ICE from a conceptual proposal to a scientifically viable paradigm, it is necessary to establish a robust neurobiological foundation. This section translates the phenomenological language of "resonance" and "shared experience" into the measurable, quantitative language of cognitive neuroscience, primarily through the established frameworks of Inter-brain Synchronization (IBS) and the neural architecture of empathy.

2.1 Inter-brain Synchronization: Mechanisms and Modulators

As introduced, IBS is the phenomenon in which the neural activities of two or more individuals become coupled during social interaction.⁵ This coupling is measured using hyperscanning, which involves the simultaneous recording of brain activity from multiple participants.³ The primary techniques used are dual-EEG and fNIRS. EEG is currently the most common method due to its chief advantage: an exceptionally high temporal resolution on the order of milliseconds. This allows for the precise capture of the fast, moment-to-moment dynamics of inter-brain coupling that unfold during social interaction.³ fNIRS, while having a lower temporal resolution, offers greater mobility and robustness in more naturalistic settings.⁵

The literature consistently implicates a network of brain regions in supporting the social-cognitive processes that drive IBS. Meta-analyses of cooperative tasks have highlighted the prefrontal cortex (PFC) and temporoparietal regions as core nodes where inter-brain synchrony is reliably observed.¹ More specifically, the mentalizing system—which includes the temporoparietal junction (TPJ), precuneus, and PFC—and the mirror neuron system—comprising the inferior frontal gyrus (IFG) and inferior parietal lobule (IPL)—are central to the forms of social cognition that facilitate neural coupling.¹ The engagement of these networks during tasks requiring cooperation, joint attention, and empathy provides the neuroanatomical substrate for the alignment of mental states between individuals.⁵ The ICE protocol, which is fundamentally a task of deep cooperation and shared attention, is therefore hypothesized to engage these same fronto-temporoparietal networks.

2.2 The Architecture of Empathy as a Causal Precondition

The capacity for two minds to resonate is not uniform across all individuals or situations; it is profoundly modulated by empathy. Empathy is not a monolithic process but a multidimensional construct comprising at least two major, interacting components that are dissociable both clinically and neurally.⁹

1. **Affective Empathy:** This is the bottom-up, automatic, and often unconscious sharing of emotional and sensorimotor states.⁹ It is the visceral capacity to feel what another person is feeling. The primary neural substrate for this component is the "observation-execution system," more commonly known as the Mirror Neuron System (MNS).⁵ Discovered by Rizzolatti and colleagues, mirror neurons are cells that fire both when an individual performs an action and when they observe the same action being

performed by another.¹¹ In humans, this system is located in regions such as the inferior frontal gyrus (IFG) and the inferior parietal lobule (IPL).¹¹ The MNS provides a direct, simulative mechanism for understanding the actions, intentions, and feelings of others by mapping them onto one's own motor and affective representations.¹³ This system, in conjunction with limbic areas like the insula and anterior cingulate cortex (ACC), allows individuals to vicariously experience the emotions of others.¹⁵

2. **Cognitive Empathy:** This is the top-down, more deliberate and conscious process of understanding another person's perspective, beliefs, and intentions, often referred to as "Theory of Mind".⁵ This more abstract, inferential capacity relies on the mentalizing network, which includes key nodes like the temporoparietal junction (TPJ) and the medial prefrontal cortex (mPFC).¹

This distinction is critical for understanding the mechanism of the ICE. Preliminary reports from the experimental protocol indicate that structured, symbolic data was produced *only* by an "empathic group," while a "rational/non-empathic control group" yielded no such results.⁵ This is not a minor demographic detail but arguably the central piece of evidence for the paradigm's underlying mechanism. The scientific literature confirms that an individual's trait empathy directly modulates the degree of IBS they exhibit during social interaction.⁵ The failure of the control group is therefore not a confounding variable but a crucial finding that provides strong evidence for a causal relationship. It suggests that the ICE protocol does not create resonance from nothing. Instead, it appears to function as a technique that requires and powerfully

amplifies a pre-existing capacity for empathic attunement. This reframes the entire phenomenon, moving its claims away from the paranormal and grounding it firmly within the domain of social neuroscience. The ICE can thus be understood as a method for investigating the upper limits of empathy-driven neural resonance.

2.3 A Two-Stage Model of Resonance Induction

The structure of the ICE protocol itself suggests a sophisticated, two-stage process designed to systematically engage these dual empathy systems. The protocol consists of a preparatory stage of "Meditative Synchronization" followed by a task-specific stage of "Directed Visualization".⁵ This structure aligns remarkably well with the neurobiological distinction between the fast, automatic affective empathy system and the slower, deliberate cognitive empathy system.¹⁰

A compelling neurobiological model for the protocol's mechanism can therefore be proposed. The two stages of the protocol may be designed to sequentially engage these two distinct

neural systems to build a state of high-fidelity resonance:

- **Stage 1: Establishing the Channel via Affective Resonance.** The initial "Meditative Synchronization" phase can be understood as a technique to establish a general state of affective resonance and shared intent. By fostering a state of deep, non-verbal cooperation and empathic engagement, this stage primarily leverages the bottom-up, automatic processes of the Mirror Neuron System and associated limbic structures. This is akin to aligning the "hardware" of the two brains, creating a global state of IBS that opens a robust channel for intersubjective coupling.
- **Stage 2: Transmitting the Signal via Cognitive Alignment.** The second "Directed Visualization" phase provides a highly specific, shared cognitive task. This stage engages the top-down, deliberate processes of the mentalizing network (mPFC, TPJ). By directing both participants to focus on the same abstract, internal concept, the protocol runs a common "software" program on the now-synchronized hardware. This sends a specific, structured signal through the previously established channel of affective resonance.

This two-stage model suggests that the ICE protocol is not a mysterious process but a structured method of neuro-phenomenological scaffolding. It is a deliberate neuropsychological intervention designed to first establish a broad, stable channel of inter-brain coupling and then transmit high-fidelity information through that channel. This structured approach would logically be far more effective at producing convergent phenomenological outcomes than simply asking two individuals to "think about the same thing."

Table 1: Neural Correlates of Inter-brain Synchronization (IBS) in Social Cognition			
Social-Cognitive State	Key Brain Regions	Dominant EEG/fNIRS Findings	Key References
Cooperation	mPFC, Superior Frontal Cortex, IFG	Increased IBS in Alpha/Beta/Theta bands, Increased coherence	¹

Empathy	dIPFC, Fronto-temporal regions, IFG, TPJ	Increased IBS in Alpha/Beta bands, especially in social pain contexts	5
Joint Attention	Parietal Cortex, Frontal Regions	Increased IBS in Alpha band	5
Communication	Fronto-temporal regions, TPJ	Increased IBS across various bands	5
Social Bond Formation	mPFC, Frontal Cortex	Increased IBS, correlated with social identity formation	5

This table synthesizes findings from the established literature, demonstrating that the core components of the ICE—cooperation, empathy, and joint attention—are all known to be associated with measurable changes in inter-brain synchrony in specific brain networks.

3. The Intersubjective Contemplative Experiment (ICE): A Proposed Paradigm

This section formally presents the methodology of the ICE, systematically dissecting its protocol, defining its unique epistemological status within the landscape of scientific inquiry, and proposing a bespoke ethical framework tailored to its specific characteristics.

3.1 Protocol and Neuro-Phenomenological Scaffolding

The core components of the ICE protocol can be analyzed as a set of structured techniques designed to induce the specific neurobiological states of high-fidelity IBS described in the previous section. By translating the protocol's original terminology into a

neuro-phenomenological framework, its underlying mechanisms become scientifically tractable.⁵

- **Stage 1: Induction of Baseline IBS via Meditative Cooperation.** This phase, previously termed "Meditative Synchronization" or "Observer-Participant Synchrony," is a period of deep, non-verbal, cooperative, and empathic engagement. The researcher is not a passive observer but an active co-experiencer, fostering a dyadic state of shared intention and mutual modeling. From a neuroscientific perspective, this stage is designed to maximize the conditions known to enhance global IBS. It leverages the bottom-up affective empathy system to establish a baseline of neural resonance, effectively aligning the "hardware" of the two brains and opening a channel for intersubjective coupling.
- **Stage 2: Guided Joint Attentional Focus on Internal Representations.** This phase, previously termed "Dimensional Targeting" or "Directed Visualization," should not be viewed as a mystical act but as a powerful form of externally guided joint attention directed toward an internal, abstract concept. By instructing both the researcher and the participant to focus on the same internal target (e.g., a specific sensory modality like vision), the protocol maximizes shared attentional focus while minimizing external distractions. This creates ideal conditions for task-specific neural coupling, analogous to conventional hyperscanning tasks where participants coordinate on a shared external goal.⁸ This process can be conceptualized as a method to pre-activate specific, modality-relevant neural networks—such as the visual cortex when targeting vision—in both participants simultaneously, preparing them for a shared experience within that domain. This is akin to running a common "software" program on the now-synchronized hardware, sending a specific signal through the established intersubjective channel.

3.2 A New Class of Inquiry: Epistemological Classification

The unique nature of the ICE methodology necessitates a careful examination of its status within scientific inquiry, as it does not fit neatly into existing categories.⁵

It shares the non-physical, imaginative nature of a classical *Gedankenexperiment* (thought experiment), such as those famously used by Einstein to explore the logical consequences of a theory. However, a thought experiment is a singular, deductive, and *a priori* exercise performed within a single mind to test conceptual consistency; it does not generate new empirical data from the world.⁵

In stark contrast, the ICE is dyadic (or polyadic), observational, and explicitly designed to generate new, intersubjective, phenomenological data in the form of symbolic outputs and convergence scores. Its essence is the interaction and resonance between at least two minds. Therefore, it requires a new classification. The term **Intersubjective Contemplative**

Experiment (ICE) is proposed to define this novel paradigm. The hybrid nature of the ICE is clarified by comparing it to standard experimental methodologies in the following taxonomy.

Table 2: A Taxonomy of Experimental Paradigms				
Paradigm	Primary Aim	Methodology	Nature of "Data"	Primary Ethical Concern
Standard Lab Experiment	To collect objective empirical data	Physical intervention/observation	Quantitative measurements	Physical/psychological harm
Classical Gedankenexperiment	To test conceptual consistency	Deductive reasoning	Logical conclusion/paradox	Logical validity
Intersubjective Contemplative Experiment (ICE)	To collect intersubjective phenomenological data	Directed contemplative resonance	Symbolic/semantic reports	Epistemic respect/voluntary participation

This taxonomy carves out a legitimate, well-defined epistemological space for the ICE, demonstrating how it is distinct from, yet related to, existing scientific methods. It is an empirical method, but its data are phenomenological; it is contemplative, but its goal is intersubjective observation.

3.3 A Bespoke Ethical Framework for Non-Invasive Intersubjective Research

The novelty of the ICE paradigm extends to its ethical considerations. Preliminary reports noted that formal Institutional Review Board (IRB) approval was not sought because the study involved no intervention, manipulation, or collection of identifiable personal data.⁵ This should be interpreted not as an oversight but as a symptom of the fundamental mismatch between

existing ethical regulations—which are primarily designed to mitigate risks of physical or direct psychological harm (e.g., from deception or trauma)—and this non-invasive paradigm.

While an ICE may be exempt from traditional risk categories, its unique nature demands a specialized ethical framework built on principles that address its specific context. The following three principles are proposed ⁵:

1. **Principle of Epistemic Respect:** This principle goes beyond the standard "respect for persons." It requires the researcher to recognize, honor, and affirm the absolute autonomy and validity of the participant's subjective, internal reality. Within the context of an ICE, there can be no "wrong" or "incorrect" internal experience. The phenomenological report is taken as a valid data point in its own right.
2. **Principle of Voluntary Intersubjective Participation:** Informed consent must extend beyond mere agreement to participate. It must include explicit, transparent consent to willingly enter a state of deep mental and emotional resonance with the researcher. The nature of this intersubjective coupling must be fully disclosed, and the participant must understand that they can withdraw at any moment without prejudice.
3. **Principle of Symbolic Anonymity:** The data collected are abstract and symbolic (e.g., "Edge," "Green," "Spin"). The core ethical requirement is to ensure that these symbols can never be traced back to an identifiable individual or used to infer sensitive personal information, a standard the preliminary study appears to meet.

In this new paradigm, ethics and epistemology are inextricably intertwined. The very method of the ICE relies on establishing a state of profound trust, openness, and empathic attunement between participants. If a participant feels judged, disrespected, or that their inner experience is being invalidated—a direct violation of the Principle of Epistemic Respect—this state of trust will be broken. The breakdown of trust would disrupt the empathic resonance that is the necessary neurobiological precondition for inducing high-fidelity IBS. Therefore, these ethical principles are not merely a bureaucratic requirement for the protection of human subjects; they are an epistemological necessity for the generation of valid data. In an ICE, good ethics is synonymous with good science.

4. Analysis of Phenomenological Data: A Neuro-Semiotic Approach

This section engages directly with the qualitative data reported in preliminary investigations. By applying the neuro-cognitive model developed in the previous sections, the symbolic outputs can be interpreted as plausible phenomenological reports arising from the targeted activation of specific sensory and cognitive brain networks. This is achieved through a neuro-semiotic approach, which studies how neural processes give rise to meaning-making

and sign interpretation.¹⁸

4.1 From High-Fidelity IBS to Induced Cognitive Isomorphism

The central and most extraordinary claim from preliminary ICE investigations is the observation of an approximately 90% ($\pm 3\%$) "semantic convergence" between the participant's symbolic outputs and the investigator's own co-experienced records.⁵ From a neuroscientific perspective, this claim can be reframed as the primary behavioral and phenomenological outcome of an exceptionally strong, high-fidelity IBS state.

Such tight neural coupling would act as a powerful cognitive constraint. The activity of a brain at any given moment can be described as a point moving through a vast, high-dimensional "state-space" of all possible neural configurations. High-fidelity IBS means that the trajectories of two brains through this state-space become tightly correlated; as one brain moves to a new state, the other is highly likely to follow a similar path. This coupling would drastically prune the tree of possible next thoughts, images, and symbols for both individuals. They would be constrained to explore a very narrow, shared subspace of cognitive possibilities.

Therefore, the reported "~90% convergence" should not be interpreted as "thought transference" or a paranormal event. Instead, it can be understood as **induced cognitive isomorphism**—the temporary generation of a functional "shared cognitive architecture" between two individuals. The high degree of similarity in their symbolic and semantic outputs is a predictable, though remarkable, consequence of this extreme cognitive constraint imposed by the powerful neural synchrony. This re-framing transforms the most challenging claim of the work from a seemingly supernatural one into a testable neuroscientific hypothesis about cognitive dynamics under conditions of extreme inter-brain coupling.

4.2 Interpreting Symbolic Outputs from Targeted Sensory Networks

A neuro-semiotic analysis of the dominant symbolic expressions reported for each targeted sensory-cognitive dimension reveals that these outputs are not random but show a high degree of face validity as subjective reports of activating specific neural systems.⁵

- **D4 (Neuroaffectus / Vestibular):** The reported outputs are "Fall" and "Spin," with an "Anxious" emotional tone.⁵ These symbols directly relate to the function of the vestibular system, which is located in the inner ear and detects rotational and linear accelerations

to govern balance, motion, and spatial orientation.²² The subjective experience of vertigo is a sensation of spinning or movement, often resulting from dysfunction or strong stimulation of the vestibular apparatus.²⁴ Synchronized activity in the vestibular nuclei, cerebellum, and parieto-insular vestibular cortex (PIVC) could readily produce a shared phenomenological experience of disorientation or motion.²³ The "Anxious" tone is also neurobiologically plausible, as there is increasing evidence for a bidirectional functional link between vestibular and fear-related neural circuits.²⁶

- **D7 (Neurovisum / Vision):** The reported outputs are "Green" and "Grid," with a "Focused" emotional tone.⁵ "Green" is an archetypal element of color perception, processed in the primary and associative visual cortex.²⁷ The symbol "Grid" is particularly intriguing. While it could be interpreted as a basic geometric form processed by orientation-selective neurons in the primary visual cortex (V1), a more profound hypothesis can be advanced.²⁸ Neuroscience has identified "grid cells" in the entorhinal cortex, which fire in a hexagonal grid pattern to map an animal's location in space.²⁸ Crucially, recent evidence suggests that grid-cell-like representations may be a general coding principle throughout the neocortex, including visual areas, forming a location-based framework for organizing perception.³⁰ It is therefore a plausible and testable hypothesis that the ICE protocol, by targeting the fundamental modality of vision, induces a shared activation of these foundational, geometric "grid-like" neural representations. The "Grid" symbol may be a direct phenomenological report of activating the brain's core representational architecture for visual space.
- **DO (Neuroverbum / Nociception):** The outputs are "Sharp" and "Red," with an "Alarmed" tone.⁵ This maps the raw, alerting quality of a pain signal onto a basic tactile descriptor ("Sharp") and a culturally common symbolic color for danger or intensity ("Red"). This is consistent with synchronized activation of the pain matrix, which includes the anterior cingulate cortex and the insula.⁵
- **D9 (Neurostatus / Interoception):** The outputs are "Weight" and "Truth," with an "Introspective" tone.⁵ This suggests a plausible link between the deep, internal sense of one's own bodily existence (interoception, proprioception, the feeling of gravity) and abstract, philosophical concepts of substance, reality, and truth. The insular cortex is a key hub for interoceptive processing, and its synchronized activity could plausibly link the sense of bodily self and gravitational presence to these abstract concepts.

A crucial question is why any particular theoretical framework should be effective at producing these results. The protocol's success hinges on inducing a state of intense, shared focus and intention. A shared belief system, narrative, or symbolic map is an exceptionally powerful tool for coordinating attention and intention. The esoteric framework used in the preliminary study, with its internally consistent mapping of senses and dimensions, provides precisely this shared narrative scaffolding. In this context, the objective truth of the framework is less important than its functional ability to align the cognitive and intentional states of the participants. This implies that the experimental paradigm may be generalizable; other rich, complex symbolic systems (e.g., Jungian archetypes, alchemical symbolism) could

potentially be used to structure the shared intentionality and produce similarly convergent results, provided the underlying conditions of empathy and cooperative intent are met.

Table 3: A Neuro-Semiotic Interpretation of Reported Symbolic Data		
Dimension (Modality)	Reported Symbolic/Emotional Output	Proposed Neuro-Cognitive Interpretation
DO (Nociception)	"Sharp", "Red" / Alarmed	Synchronized activation of the pain matrix (e.g., anterior cingulate cortex, insula), producing a shared phenomenological report of a raw, alerting sensory signal.
D1 (Tactile)	"Edge", "Line" / Curious	Co-activation of the somatosensory cortex, processing basic haptic features like boundaries and contours.
D4 (Vestibular)	"Fall", "Spin" / Anxious	Coupled activity in the vestibular nuclei, cerebellum, and PIVC, creating a shared subjective experience of motion and disorientation, with associated anxiety due to vestibular-limbic connections.
D7 (Vision)	"Green", "Grid" / Focused	Synchronized activity in the primary visual cortex (V1/V2) and associative visual areas, processing basic geometric forms and color. The "Grid" symbol

		may reflect activation of foundational grid-cell-like representations in the visual system.
D8 (Hearing)	"Echo", "Order" / Moved	Coordinated activation of the auditory cortex, processing temporal patterns and acoustic structures, leading to reports of rhythm and sequence.
D9 (Interoception)	"Weight", "Truth" / Introspective	Synchronized activity in the insular cortex and other interoceptive networks, linking the sense of bodily self and gravitational presence to abstract concepts of substance and reality.

5. Discussion

This paper has presented a comprehensive neuro-philosophical framework designed to scientifically ground and ethically situate the novel experimental paradigm of the Intersubjective Contemplative Experiment. By translating the concept of subjective resonance into the measurable neurophysiology of Inter-brain Synchronization, re-classifying the methodology as a distinct form of scientific inquiry, and providing a neuro-semiotic interpretation of its phenomenological outputs, this work establishes a legitimate, albeit challenging, new frontier for research. This section synthesizes these arguments, addresses key limitations and future directions, and proposes a concrete roadmap for empirical validation.

5.1 Synthesis and Implications

The core thesis of this paper is that the ICE represents a unique and valuable tool for cognitive neuroscience. It provides a method to investigate the neural correlates of intersubjectivity driven purely by shared intentionality, a variable that is typically confounded in conventional hyperscanning studies. The proposed framework makes several key theoretical contributions:

- It reframes "meditative synchronization" as a protocol for inducing high-fidelity IBS via shared intentionality and empathy-modulated attunement.
- It re-interprets the claim of "~90% semantic convergence" as the behavioral output of "induced cognitive isomorphism," a testable hypothesis about cognitive dynamics under extreme neural coupling.
- It re-classifies the "remote mind experiment" as an Intersubjective Contemplative Experiment, carving out a distinct epistemological space for this type of inquiry.

The implications of this research program are far-reaching. For consciousness studies, the ICE offers a potential methodology to empirically investigate shared phenomenal states, moving beyond the study of individual consciousness. For social neuroscience, it provides a powerful tool to isolate and study the "intention" component of IBS, which appears to be a primary driver of neural coupling. For philosophy of mind, it offers an empirical approach to long-standing questions about intersubjectivity, shared reality, and the nature of empathy.

5.2 Limitations and Future Directions

A critical and forward-looking scientific proposal must also acknowledge its limitations and the complexities of the phenomena it seeks to investigate.

- **Inter-brain Desynchronization (IBD):** The focus on synchronization should not obscure other important dynamics. Recent theoretical work has proposed that Inter-brain Desynchronization (IBD), measured as decreased phase synchrony, may also play a crucial functional role.³³ IBD is predicted to increase with a participant's socially motivated subjective involvement in an interaction, reflecting an increase in their neural entropy. The relationship between IBS and IBD is likely complex, varying over time and across frequency bands. Future ICE studies should therefore analyze for both synchrony and desynchrony to develop a more complete and nuanced picture of the inter-brain dynamics at play.
- **Validation of Subjective Reports:** The ICE paradigm relies heavily on first-person, phenomenological data. While the focus on high inter-rater reliability (~90% convergence) provides a powerful form of built-in, intersubjective validation, the richness of these reports could be further explored. Future work should incorporate more

structured phenomenological interview techniques, as developed within the field of neurophenomenology.³⁴ These methods, which train participants to bracket assumptions and attend to the structure of their experience, could provide more fine-grained data to correlate with neural dynamics.

- **Generalizability of the Symbolic Framework:** As noted, the success of the protocol likely depends on the participants' shared belief in a guiding narrative or symbolic map. The framework used in the preliminary study was effective, but is it unique? It is plausible that the ICE method is generalizable beyond any single belief system.⁵ Future research could test this by attempting to replicate the findings using other rich, complex, and internally consistent symbolic systems (e.g., Jungian archetypes, alchemical symbolism, or other intricate cosmologies). Positive results would demonstrate that the core mechanism is the induction of shared intentionality, rather than the specific content of the symbolic framework used to achieve it.

5.3 A Roadmap for Empirical Validation: A Dual-EEG Hyperscanning Protocol

For the ICE model to gain full scientific acceptance, its core claims must be translated into testable, falsifiable hypotheses. A concrete hyperscanning study is proposed to achieve this, moving the paradigm from a theoretical proposal to a program of empirical research.

- **Objective:** To empirically test the central hypothesis that the ICE "directed visualization" protocol induces measurable Inter-brain Synchronization (IBS) between a researcher and a participant, and that the magnitude of this IBS correlates with the degree of reported semantic convergence.
- **Methodology:** A dual-EEG hyperscanning methodology would be employed. EEG is the ideal choice due to its high temporal resolution, which is essential for capturing the fast-changing brain dynamics and inter-brain coordination processes that are hypothesized to occur.³ A dyad (e.g., researcher and participant) would be located in separate, electromagnetically shielded rooms to maintain the remote condition and eliminate any possibility of sensory cueing.
- **Conditions:** The dyad would engage in two distinct conditions in a counterbalanced order:
 1. **Experimental Condition (ICE):** The dyad executes the full two-stage ICE protocol. They first engage in a period of meditative cooperation to establish a baseline resonance, followed by the targeting of a specific, pre-determined dimension (e.g., D7 - Vision, focusing on the concepts "Green" and "Grid").
 2. **Control Condition (Individual Task):** The dyad performs a non-cooperative, individual mental task of similar cognitive load and duration (e.g., counting backwards from a large, randomly generated number by sevens). This condition

controls for general brain activity, attention, and cognitive effort not related to intersubjective coupling.

- **Hypotheses:**

1. **Main Effect of IBS:** There will be a significant increase in inter-brain phase-locking (a quantitative measure of IBS) during the ICE condition compared to the individual task control condition.
2. **Topography and Frequency:** This IBS is predicted to be most prominent in the alpha band (linked to attention and visual processing) and beta band (linked to higher-order cognition) over fronto-temporal and parieto-occipital brain regions, consistent with the known networks for social cognition, mentalizing, and visual processing.¹
3. **Brain-Behavior Correlation:** Crucially, the measured strength of the IBS (e.g., the average phase-locking value) during each ICE trial should show a significant positive correlation with the degree of semantic similarity in the symbolic outputs collected independently from both participants post-task. Semantic similarity can be quantified using established computational linguistics models.

This experimental design provides a clear, actionable, and falsifiable path forward. A positive result—particularly the confirmation of the brain-behavior correlation in Hypothesis 3—would provide strong, direct evidence for the proposed neurobiological model. It would demonstrate that the remarkable phenomenological convergence described in the ICE is tied to measurable states of brain-to-brain synchrony, completing the journey of the concept from an esoteric claim to a rigorous, empirically grounded scientific paradigm.

6. Conclusion

This report has presented a comprehensive neuro-philosophical framework that scientifically grounds and ethically situates the novel experimental paradigm of the Intersubjective Contemplative Experiment. By systematically translating the concept of subjective resonance into the measurable neurophysiology of Inter-brain Synchronization, defining a bespoke ethical and epistemological space for the methodology, and interpreting its preliminary data through a neuro-semiotic lens, this work transforms a speculative proposal into a viable research program. The ICE offers a unique method for isolating and investigating the power of pure shared intentionality to shape neural dynamics and subjective experience. The proposed model and its accompanying roadmap for empirical validation point toward a future science capable of investigating the deepest questions of shared subjective reality, intersubjective consciousness, and the neural basis of collective human experience in a manner that is both rigorous and respectful of the phenomena it seeks to understand.

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