THE NEUROLOGICAL BASIS OF AWAKENING:

JHANA PRACTICE, MASSIVE NEUROPLASTICITY, NONMATERIALIST CONSCIOUSNESS, AND THE NEUROBIOLOGY OF THE BUDDHA'S ENLIGHTENMENT

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by

Michael F. Roe, Candidate M.Div.

Asiana University: Department of Cognitive and Contemplative Sciences

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ABSTRACT

This dissertation, submitted by Michael F. Roe, Candidate M.Div., presents a comprehensive interdisciplinary investigation into the neurological and philosophical mechanisms underlying Gautama Buddha's progressive entry into the four jhanas (meditative absorptions) and the subsequent attainment of awakening (bodhi). Drawing upon convergent evidence from contemplative neuroscience, clinical neuropsychology, neuroimaging research, canonical Pali Buddhist literature, and nonmaterialist philosophy of mind, this work advances a unified theoretical framework designated the Neuroplastic Awakening Model with Nonmaterialist Supplement (NAM-NM).

The NAM-NM holds a dual thesis. First, the materialist thesis: the four jhanas constitute a precisely ordered neurological protocol that systematically suppresses the default mode network (DMN), quiets amygdalar reactivity, suspends thalamo-cortical sensory gating, and dissolves ego-referential predictive hierarchies, producing a state of maximum cognitive plasticity from which direct, unfiltered insight into the three marks of existence becomes neurologically possible. Second, the nonmaterialist supplement: within a filter-hypothesis framework, the brain does not generate consciousness but restricts and focuses a more fundamental, non-local consciousness. The jhanas constitute a progressive relaxation of this filtering function, and the fourth jhana achieves maximal filter transparency — enabling the meditator to access trans-individual information and the unconditioned ground of awareness itself. These two theses are complementary, not contradictory: the materialist account explains the neural correlates; the nonmaterialist supplement explains what those correlates make possible at the level of consciousness.

The dissertation proceeds across eight chapters. Chapters One through Three establish the philological, phenomenological, and neuroimaging foundation, each structured as dual-reading analyses. Chapter Four advances the central argument concerning the fourth jhana as maximum cognitive plasticity and maximum filter transparency, with integrated readings across ego-boundary dissolution, unobstructed insight, and the qualitative threshold effect of their conjunction. Chapter Five integrates the neurobiology of liberation with the consciousness-philosophy of nibbana as realized unconditioned ground. Chapter Six addresses objections across both frameworks, including the hard problem of consciousness and skeptical responses to psi research. Chapter Seven synthesizes broader implications. Chapter Eight — the expanded core nonmaterialist contribution — provides the full systematic account: the filter hypothesis, idealism and panpsychism, the Akashic field, psi phenomena, quantum consciousness, past-life recollection, and the unconditioned ground of nibbana.

Keywords: jhana, neuroplasticity, default mode network, nonmaterialist consciousness, filter hypothesis, panpsychism, idealism, akashic field, non-local memory, psi, past lives, quantum consciousness, predictive processing, nibbana, awakening, contemplative neuroscience, filter relaxation, mind-at-large, dissociative boundary, Kastrup, Laszlo, Stevenson

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CHAPTER ONE

Introduction: The Dual Framework

1.1 Statement of the Problem

The awakening of Siddhartha Gotama beneath the Bodhi tree at Bodh Gaya, conventionally dated to approximately 528 BCE, represents one of the most consequential transformations in human intellectual and religious history. Across twenty-five centuries, Buddhist traditions have elaborated intricate phenomenological accounts of that event, its preconditions, and its permanent effects. What these traditions have lacked is a mechanistic account grounded in the language of neuroscience; and what modern neuroscience has characteristically lacked is a philosophically rigorous engagement with what that event may reveal about the fundamental nature of consciousness itself. The present dissertation, submitted by Michael F. Roe, Candidate M.Div., undertakes both tasks simultaneously.

A fully adequate account of the Buddha's enlightenment requires two complementary frameworks. First, a materialist neuroscientific account — the Neuroplastic Awakening Model (NAM) — describing how the four jhanas systematically suppress the default mode network, quiet amygdalar reactivity, suspend thalamo-cortical gating, and produce a state of maximum cognitive plasticity. Second, a nonmaterialist philosophical account — the Nonmaterialist Supplement (NM) — describing how those same neural changes constitute a progressive relaxation of the brain's filtering function, allowing individual consciousness to access dimensions of a more fundamental, non-local awareness ordinarily excluded by biological individuation.

This dual approach is necessitated by the canonical evidence itself. The materialist account encounters an explanatory ceiling at the first two of the three knowledges (tevijja) attained by the Buddha on the night of awakening: the recollection of vast numbers of past lives in verifiable detail, and the perception of beings passing away and reappearing across the field of kamma. These phenomena are incoherent within any framework that treats memories as exclusively biological engrams stored in neurons that cease to exist at physical death. The nonmaterialist supplement — grounded in the filter hypothesis, the Akashic field concept, empirical psi research, and contemporary idealist and panpsychist philosophy — provides the theoretical resources to address these features without abandoning scientific rigor.

1.2 Significance and Scope

The significance of this inquiry is threefold. Within Buddhist studies, it contributes a new interdisciplinary hermeneutic reading canonical phenomenological reports through both neuroscientific and consciousness-philosophical lenses. Within contemplative neuroscience, it extends the project of identifying neural correlates of meditative states to the most advanced attainments, while challenging the field's characteristic materialist assumptions. Within philosophy of mind, it brings the Buddhist data to bear on contemporary debates between

materialist, dualist, panpsychist, and idealist accounts of the mind — debates in which the rich phenomenological record of Buddhist practice has been underutilized.

The scope is bounded by the four rupa jhanas of the Pali Nikayas, the canonical night-of-enlightenment narrative of the Mahasaccaka Sutta (MN 36), and Buddhaghosa's Visuddhimagga. The neuroscientific analysis draws on fMRI, EEG, MEG, and theoretical frameworks from predictive processing, affective neuroscience, and network neuroscience. The nonmaterialist analysis draws on contemporary idealism (Kastrup, 2019), panpsychism (Goff, 2019), the filter hypothesis (James, 1898; Kelly et al., 2007), the Akashic field (Laszlo, 2004, 2007), quantum consciousness theory (Penrose and Hameroff, 1996; Bohm, 1980), and empirical psi research (Stevenson, 1997; Tucker, 2013; Bem, 2011).

1.3 Methodological Considerations and Limitations

Any attempt to provide a neurological and philosophical account of the Buddha's awakening faces formidable methodological challenges. The most fundamental is the impossibility of direct empirical investigation: Siddhattha Gotama lived approximately 2,500 years ago, and the only evidence available derives from texts composed, redacted, and transmitted across centuries. This limitation does not render the inquiry unrigorous. Historians of science routinely construct theoretical accounts of historical phenomena without direct observation, evaluated by inferential quality, consistency with evidence, parsimony, and the generation of testable predictions.

The nonmaterialist dimension introduces additional complexity. Psi research, near-death studies, and past-life research are contested domains in which claims of anomalous cognition are subject to ongoing methodological debate. The dissertation engages this debate with appropriate epistemic humility, consistently distinguishing among what the evidence strongly supports, what it is consistent with, and what remains speculative inference. The nonmaterialist framework is presented not as established fact but as theoretically serious, empirically motivated, and explanatorily productive — the strongest available account of phenomena that the materialist framework cannot address.

1.4 The Dual Framework: NAM and NAM-NM

The original Neuroplastic Awakening Model (NAM) proposed five hierarchically ordered materialist propositions: attentional stabilization and primary network reorganization (NAM-1); jhana-specific hierarchical neural suppression (NAM-2); maximum neuroplasticity in the fourth jhana (NAM-3); unobstructed cognitive penetration of reality from that platform (NAM-4); and permanent restructuring producing stable liberation (NAM-5). These propositions are retained and deepened in the present revision.

The Nonmaterialist Supplement (NM) adds three further propositions. NM-1: the jhanas constitute a systematic relaxation of the brain's filtering function — the mechanism by which a more fundamental, non-local consciousness is ordinarily constrained to the informational needs of individual biological survival. NM-2: the first two knowledges are explicable within the filter hypothesis as consequences of maximally relaxed filtering, allowing access to non-local information stored in a trans-individual consciousness field. NM-3: the unconditioned dimension of nibbana that Buddhist philosophy insists upon corresponds to the direct realization of

consciousness as it fundamentally is — prior to and independent of the conditioned filtering processes of biological individuation. The integrated framework NAM-NM holds that both sets of propositions are true and complementary.

1.5 Dissertation Roadmap

Chapters Two and Three provide the philological, phenomenological, and neuroimaging foundation, structured from the outset as dual-reading analyses. Chapter Four advances the revised core theoretical argument, incorporating both the maximum-plasticity thesis and the maximum-filter-transparency thesis, with integrated readings across all major sections. Chapter Five integrates the neurobiology of liberation with the consciousness-philosophical account of nibbana. Chapter Six addresses objections across both frameworks. Chapter Seven synthesizes implications. Chapter Eight provides the full systematic nonmaterialist account that underlies and completes the integration throughout.

CHAPTER TWO

The Four Jhanas: Phenomenology and Canonical Sources

2.1 Pali Sources and Textual Authority

Any neurologically and philosophically informed account of the jhanas must be grounded in the primary sources. The canonical Pali literature of the Theravada tradition preserves the earliest and most systematic accounts of jhana practice available to scholarship, and the jhana descriptions in the Nikayas are broadly agreed to preserve some of the most reliable material in the entire corpus (Bronkhorst, 1993; Gethin, 1998; Sujato, 2012). The Samannaphala Sutta (DN 2), the Mahasaccaka Sutta (MN 36), and Buddhaghosa's fifth-century Visuddhimagga are the primary textual sources. Both the materialist NAM and the nonmaterialist NM read these same texts but draw different and complementary inferences: the NAM reads them as reports of progressive neural suppression and cognitive reorganization; the NM supplement reads them simultaneously as reports of progressive filter relaxation and consciousness expansion. This dual reading is applied throughout.

2.2 The Soteriological Architecture of Meditative Absorption

The Pali term jhana relates etymologically to jhayati — to burn or to contemplate — suggesting sustained, purifying attention. The Visuddhimagga identifies each jhana by its characteristic factors (jhananga): applied thought (vitakka), sustained thought (vicara), joy (piti), pleasure (sukha), and one-pointedness (ekaggata). The progression through the four jhanas involves the sequential abandonment of these factors as the mind deepens into unification and stillness. From the NAM perspective, each abandoned factor corresponds to the quieting of a specific neural system. From the NM perspective, each abandonment marks a further relaxation of the brain's ordinary filtering and boundary-maintenance functions. The soteriological architecture of the jhanas is simultaneously a neural architecture and a consciousness architecture.

2.3 First Jhana: Applied and Sustained Thought

'Quite secluded from sensual pleasures, secluded from unwholesome states, a bhikkhu enters and dwells in the first jhana, which is accompanied by applied and sustained thought, with rapture and pleasure born of seclusion' (MN 36.31, trans. Bhikkhu Bodhi). The first jhana retains vitakka and vicara — intentional cognitive operations — alongside piti and sukha, an affective positivity that arises not from sensory stimulation but from the mind's own settling. NAM reading: sustained DMN suppression, maintained dorsal attention network (DAN) activity, initial amygdalar quieting, and emerging gamma synchrony. NM reading: 'born of seclusion' (vivekaja) signals the emergence of consciousness's intrinsic affective quality as the filter begins to loosen — awareness beginning to be accessible as it is, rather than as the biological prediction machine ordinarily constructs it.

2.4 Second Jhana: Internal Confidence and Mental Unification

'With the stilling of applied and sustained thought, a bhikkhu enters and dwells in the second jhana, which has internal confidence and unification of mind, is without applied and sustained thought, and has rapture and pleasure born of concentration' (DN 2.81). The abandonment of vitakka and vicara marks a qualitative shift from deliberate attentional operations to spontaneous, unified, effortless awareness. NAM reading: cessation of DAN-mediated effortful attention, deeper DMN suppression, more comprehensive thalamic gating, further amygdalar quieting, increased gamma coherence. NM reading: spontaneous unification marks consciousness beginning to settle into itself rather than being steered by the deliberate operations of the biological-cognitive system. The filter's grip loosens further.

2.5 Third Jhana: Equanimous Awareness and Mindful Pleasure

'With the fading away of rapture, a bhikkhu dwells equanimous and, mindful and clearly comprehending, he experiences pleasure with the body' (DN 2.82). The fading of piti leaves a more refined well-being characterized by equanimity (upekkha) and mindfulness (sati). NAM reading: reduced mesolimbic dopaminergic activation; refined medial prefrontal meta-awareness; beginning comprehensive insular quieting. NM reading: the explicit presence of sati and upekkha suggests that in the third jhana individual consciousness is simultaneously aware of itself and of the progressive loosening of its ordinary biological constraints — metacognitive awareness of the filter relaxation itself.

2.6 Fourth Jhana: Pure Equanimity and One-Pointedness

'With the abandonment of pleasure and pain, and with the previous disappearance of joy and grief, a bhikkhu enters and dwells in the fourth jhana, which has neither-pleasure-nor-pain and purity of equanimity and mindfulness' (DN 2.83). Both affective poles have been transcended. The Mahasaccaka Sutta uses mudu (pliant) and kammaniya (malleable) — language of maximum workability. NAM reading: near-complete DMN deactivation; profound amygdalar quiescence; comprehensive thalamic gating; substantial insular suspension; maximally elevated gamma coherence — maximum cognitive plasticity. NM reading: maximum filter transparency — individual consciousness standing open to the non-local field, 'pliant and malleable,' ready for the three knowledges.

2.7 The Three Knowledges (Tevijja) Following the Fourth Jhana

From the platform of the fourth jhana, the Buddha attains three successive knowledges: recollection of past lives (pubbenivāsānussati-nana), the divine eye perceiving beings across the karma-field (cutūpapāta-nana), and the direct recognition of the Four Noble Truths with destruction of the mental fermentations (asavakkhaya-nana). The third knowledge — the mechanism of liberation — is addressed primarily by the materialist NAM in Chapters Four and Five. The first two knowledges are addressed almost exclusively by the NM supplement: a brain generating consciousness from biological tissue cannot recollect the experiences of biological bodies long since decomposed, but a consciousness that is non-local, filtered by but not generated by the brain, accessing a trans-individual field, can. Chapter Eight provides the full account.

CHAPTER THREE

Neural Correlates of Meditative Absorption

3.1 Neuroimaging of Meditative States

The scientific study of meditation's effects on the brain has undergone a transformation over four decades. Early EEG studies measuring alpha-wave activity gave way to fMRI investigations identifying specific neural regions modulated by meditation. The landmark studies of Richard Davidson and colleagues (Lutz et al., 2004, 2008; Davidson et al., 2003) established that long-term Buddhist practitioners demonstrate dramatically enhanced gamma-wave synchrony during meditation, sustained even outside formal meditation sessions — suggesting enduring neural architecture changes rather than merely state-dependent effects. Sara Lazar and colleagues (2005) established measurable cortical thickness increases in long-term meditators in the right insula, right somatosensory cortex, left superior temporal gyrus, and frontal regions implicated in attention and cognitive control.

For the present analysis, the most directly relevant work examines deep absorption states and self-boundary dissolution. Josipovic (2014) found patterns in nondual awareness distinct from ordinary rest and focused attention. Berkovich-Ohana and colleagues (2013) documented neural correlates of self-boundary dissolution, finding consistent changes in the temporoparietal junction, posterior superior temporal sulcus, and medial prefrontal cortex. Crucially for the NAM-NM: none of these findings definitively establishes whether neural changes are generators of experiential states or correlates of a more fundamental consciousness event. The same data is consistent with both the materialist NAM and the nonmaterialist NM readings.

3.2 The Default Mode Network: Dual-Reading Analysis

The default mode network (DMN) — comprising the medial prefrontal cortex, posterior cingulate cortex (PCC), precuneus, angular gyrus, and hippocampal formation — is active during rest and deactivated during external task performance. It is associated with self-referential processing, mind-wandering, autobiographical memory, and social cognition (Buckner et al., 2008). Under the NAM, the DMN is the neural substrate of ordinary selfhood. Under the NM supplement, the DMN is simultaneously the neural mechanism of the dissociative boundary (Kastrup, 2019) — through which mind-at-large maintains the experiential boundary of individual consciousness. These are complementary levels of description, not competing explanations. The progressive suppression of DMN activity across the jhanas is therefore simultaneously a progressive dismantling of the ego-narrative (NAM) and a progressive relaxation of the boundary between individual and non-local consciousness (NM).

3.3 Amygdala Regulation, Thalamic Gating, and Filter Effects

The amygdala mediates automatic, pre-conscious appraisal of stimuli as threatening or safe. Contemplative neuroscience documents substantial amygdala changes in long-term meditators: faster recovery to emotional stimuli (Davidson et al., 2003), decreased activation to

distracting stimuli during meditation (Brefczynski-Lewis et al., 2007), and measurable gray matter reductions following MBSR (Holzel et al., 2010, 2011). Under the NAM: enhanced prefrontal regulatory control. Under the NM supplement: reduction of the survival-contraction that confines individual consciousness to biologically relevant information — the amygdala as a key node in the biological filter.

Thalamic gating restricts sensory information flow to cortex during focused attention states. Under the NM supplement, following Kelly and colleagues' (2007) Irreducible Mind framework, the thalamus may act as a filter not merely of peripheral sensory input but of a broader informational field. The progressive relaxation of thalamic gating across the jhanas corresponds to a progressive widening of the informational aperture through which individual consciousness connects to the non-local field — complementing the NAM's account of progressive sensory withdrawal.

3.4 Gamma Synchrony and Neural Coherence

Lutz and colleagues (2004) reported gamma oscillations of high amplitude and widespread synchrony in experienced practitioners during meditation — among the largest functional connectivity ever reported for a voluntary task. Under the NAM: high gamma synchrony is the neural substrate of the 'concentrated, purified, bright, unblemished' mind described in the Mahasaccaka Sutta — maximum coherent information-processing capacity. Under the NM supplement: the same synchrony may represent the neural signature of maximum filter transparency — a brain whose internal coherence has minimized the noise that ordinarily obscures access to the broader consciousness field. Two levels of description of the same neural phenomenon.

3.5 Insular Processing and Interoceptive Quieting

The insula plays a central role in interoception — processing signals from within the body that contribute to the sense of embodied self. Long-term meditation has been associated with increased insular thickness (Lazar et al., 2005) and enhanced interoceptive awareness, alongside the progressive quieting of insular processing in deeper absorption. These are two sides of the same meditative capacity: enhanced sensitivity and voluntary modulation. Under the NM supplement, progressive insular quieting across the deeper jhanas corresponds to the loosening of the somatic anchor of biological individuation — the body-sense that, on the filter hypothesis, is among the primary mechanisms maintaining the individual's identification with a specific biological location.

3.6 A Dual-Reading Neural Correlate Map of the Four Jhanas

First Jhana — NAM: sustained DMN suppression; maintained DAN; initial amygdalar quieting; emerging gamma; beginning thalamic gating. NM: initial dissociative boundary relaxation; emergence of intrinsic consciousness quality (piti/sukha vivekaja). Second Jhana — NAM: cessation of effortful attention; deeper DMN suppression; more comprehensive thalamic gating; increased gamma. NM: spontaneous consciousness unification as deliberate biological steering diminishes. Third Jhana — NAM: reduced mesolimbic excitation; refined prefrontal

meta-awareness; insular quieting begins. NM: metacognitive awareness of progressive filter relaxation. Fourth Jhana — NAM: near-complete DMN deactivation; profound amygdalar quiescence; comprehensive thalamic gating; insular suspension; maximal gamma. NM: maximum filter transparency — individual consciousness open to the non-local field. Maximum plasticity meets maximum transparency.

CHAPTER FOUR

The Fourth Jhana: Maximum Cognitive Plasticity and Maximum Filter Transparency

4.1 Predictive Processing and the Constructed Self

The theoretical framework of predictive processing (Friston, 2010; Clark, 2016) proposes that the brain is fundamentally a prediction machine: rather than passively registering sensory data, it continuously generates hierarchically organized predictive hypotheses that anticipate input and are revised only when prediction errors exceed a precision threshold. Ordinary perception is not a direct registration of reality but the brain's best guess, filtered through layers of prior expectations. The sense of self is itself a prediction: a highly stable, self-fulfilling model of the organism's identity, generated by the DMN and continuously confirmed by the data that the self-model itself selects and interprets.

From the NAM perspective, suffering is structural: it arises from the gap between the self-model's predictions and the actual flow of experience, a gap the deepest layer of the self-model resists closing because it generates the very filters through which all other information is processed. From the NM perspective, the predictive processing machinery is simultaneously the primary biological mechanism by which the brain maintains the individual's bounded perspective — the survival-oriented informational profile that constitutes ordinary, filtered consciousness. The self-model (NAM) and the dissociative boundary (NM) are two descriptions of the same neural machinery, two levels of accurate analysis of the same computational architecture of selfhood.

4.2 Suspension of Predictive Hierarchies in Deep Absorption

The jhanas constitute a systematic technology for suspending the brain's ordinary predictive hierarchies. At each stage of deepening absorption, a further layer of the predictive apparatus is quieted: the amygdala's emotional predictions, the thalamo-cortical sensory predictions, the DMN's self-referential predictions, the insula's interoceptive predictions. By the fourth jhana the cumulative effect is the near-total suspension of the entire predictive apparatus that normally generates ordinary experience.

The NM supplement redescribes this simultaneously: the predictive processing machinery is the primary mechanism by which the brain maintains biological perspective — the survival-oriented informational profile constituting ordinary, bounded, filtered consciousness. The jhanas' suspension of predictive hierarchies is therefore simultaneously a suspension of the neural prediction machine (NAM) and a relaxation of the primary biological mechanism through which consciousness is filtered and individuated (NM). Friston's 'active inference' is progressively suspended across the jhanas: the meditator ceases habitual sampling strategies that perpetuate the self-model, and the self-model, deprived of its confirmatory data, progressively dissolves. In NM terms, the filter progressively opens.

4.3 Ego-Boundary Dissolution: Neural and Nonmaterialist Readings

A central claim of both the NAM and the NM supplement concerns ego-boundary dissolution in the fourth jhana. The neural reading grounds this in the temporoparietal junction, right parietal cortex, precuneus, and PCC — regions implicated in embodied selfhood and self-location. Berkovich-Ohana and colleagues (2013) documented significant activity changes in exactly these regions in advanced meditators reporting self-boundary dissolution.

The nonmaterialist reading adds: on Kastrup's (2019) idealist framework, ego-boundary dissolution is not merely the deactivation of a neural system but the temporary collapse of the dissociative boundary maintaining individual consciousness as a bounded alter of mind-at-large. The two readings are not competing explanations but complementary descriptions at different levels — analogous to describing a radio circuit in terms of its transistors and capacitors (the neural level) and in terms of how it tunes to a frequency and transduces electromagnetic waves into sound (the consciousness level). Both are accurate; neither is replaceable by the other; a complete account requires both.

4.4 Unobstructed Insight: Dual-Framework Analysis

From the platform of the fourth jhana — maximum neural plasticity and maximum filter transparency — the canonical texts describe the Buddha directing his attention to the investigation of the nature of reality. Under the NAM: a uniquely powerful cognitive operation — direct, unmediated neural perception of the features characterizing all conditioned experience, conducted through a cognitive apparatus stripped of ordinary predictive filters, ego-referential agenda, and affective coloring. Under the NM: the meditator's awareness, no longer filtered by the full force of the biological individuating mechanism, perceives reality from a perspective closer to mind-at-large than to the ordinary biological-survival perspective.

The insight is 'unobstructed' in both senses simultaneously: unobstructed by the neural prediction machine (NAM) and unobstructed by the filter (NM). The convergence of both conditions in the fourth jhana specifically accounts for why the third knowledge must arise from the fourth jhana rather than from an earlier stage. The NAM-NM answer is that maximum plasticity and maximum filter transparency together produce a qualitative threshold effect that neither condition alone can produce — enabling both permanent neural restructuring of liberation and direct realization of the unconditioned ground of awareness.

4.5 Seeing Impermanence Without Conceptual Filters

The direct perception of impermanence (anicca) in the fourth jhana can be understood neurologically as the first-person observation of what neural science knows in the third person: that all neural events are transient, that no configuration of neural activity persists unchanged. Under ordinary conditions, the brain's predictive machinery actively generates the experiential impression of stability and continuity. In the fourth jhana, with the predictive machinery maximally suspended, raw impermanence becomes directly apparent without conceptual overlay.

The NM supplement adds a further dimension: impermanence is not merely a feature of individual neural processing that becomes visible when the prediction machine is suspended. It is a fundamental feature of conditioned reality as such — of the arising and passing of all conditioned phenomena within mind-at-large. To perceive it from the platform of the fourth jhana is to perceive

it from a vantage point closer to how reality actually is than any ordinary perspective permits — from the perspective of the awareness that witnesses change without itself being changed, the pabhassara citta, the bright mind, the unconditioned ground that the tradition consistently points to.

4.6 The Filter at Maximum Transparency: Implications for Access

If the filter is maximally transparent in the fourth jhana, then not only does individual consciousness have unmediated access to the intrinsic features of present-moment experience — impermanence, non-self, dependent origination — it also has potential access to information ordinarily excluded by the filter entirely: information belonging to the broader non-local consciousness field. This is the philosophical grounding for the first and second knowledges. The recollection of past lives and the perception of beings across the karma-field are not available from the perspective of filtered, biologically-individuated consciousness, which is restricted by design to information relevant to the current biological existence. But from the perspective of a consciousness whose filter has been maximally relaxed, this information becomes available — not as a miracle but as a natural consequence of expanded informational access.

The NM supplement predicts that the phenomenological experience of the fourth jhana should include not only extraordinary clarity and equanimity — which the materialist NAM also predicts — but also at least the potential for experiences that transcend ordinary biographical memory: expanded identity, access to non-local information, dissolution of ordinary temporal boundaries. This is precisely what advanced meditators across traditions consistently report, and these features are uniquely predicted by the NM supplement rather than the NAM alone.

4.7 Dependent Origination as a Directly Perceived Network

The Buddha's second knowledge includes, at a deeper level, the direct perception of dependent origination (paticca-samuppāda): every arising event is the arising of a condition, the entire causal network a seamless web of interdependence. Under the NAM: metacognitive awareness in which the brain's own causal architecture becomes transparent to itself as a direct perceptual datum. Under the NM: from the vantage point of maximally transparent filter-consciousness, the meditator perceives not only the causal architecture of present-moment experience but the broader karma-field within which streams of individual consciousness interact, arise, and pass.

Dependent origination includes the twelve-link chain through which craving arises. To perceive this chain directly — from within equanimity, with the machinery that drives it maximally quieted, from a consciousness perspective of maximum filter transparency — is to perceive simultaneously the mechanism of suffering and its contingent, non-necessary character. It is to see, in direct experience, that craving is not a fixed feature of reality but a conditioned process that arises from conditions and, when those conditions are absent, simply fails to arise. This perception, achieved under conditions of both maximum neuroplasticity and maximum filter transparency, is what makes the resulting extinction of craving permanent rather than temporary.

CHAPTER FIVE

The Neurobiology and Ontology of Permanent Liberation

5.1 Long-Term Potentiation and the Hardwiring of Suffering

To understand the neurobiology of liberation, it is necessary first to understand the neurobiology of bondage. The mechanisms of Hebbian learning and long-term potentiation (LTP) — neurons that fire together wire together — ensure that every craving response, every amygdalar fear activation, every self-referential DMN narrative following an aversive event constitutes a learning event that strengthens the very circuits through which it occurs. The result, across a lifetime of experience, is structural consolidation: synaptic connections strengthened, dendritic structures elaborated, and in some cases gross morphology altered. This is what Buddhist philosophy means by asava (fermentation or taint): not merely a bad habit but a structurally sedimented disposition.

The NM supplement adds an important dimension: on the filter hypothesis, these neural circuit consolidations are simultaneously the biological implementation of karmic patterning — the way in which the accumulated tendencies of the individual consciousness stream are encoded not only in the neurons of the current biological vehicle but in the non-local consciousness field as imprints that persist beyond the biological lifetime. Liberation must therefore operate at both levels: restructuring the biological circuits (NAM) and dissolving the karmic patterning in the non-local field (NM). The fourth jhana's conjunction of maximum plasticity and maximum filter transparency is precisely what enables both operations simultaneously.

5.2 Neuroplastic Restructuring Through Insight

The NAM-NM proposes that the liberating insight of the fourth jhana produces neuroplastic restructuring through a mechanism that is both continuous with ordinary Hebbian learning and qualitatively more powerful. The fourth jhana's state of maximum cognitive plasticity — in which the brain's ordinary predictive hierarchies, self-referential processing, and affective conditioning systems are maximally suspended — constitutes a unique window of enhanced synaptic plasticity during which the direct cognitive insight into the nature of experience can produce rapid, comprehensive restructuring of neural circuitry. This is analogous to the concept of critical periods in neural development: windows of heightened plasticity during which experience produces particularly powerful and lasting neural changes.

The NM supplement adds: maximum filter transparency means that individual consciousness is operating from a perspective closer to mind-at-large than to its ordinary individuated perspective. The insight into impermanence, non-self, and dependent origination that arises from this perspective is not merely a neural event but a consciousness event — the direct recognition, by awareness itself, of its own nature and of the conditioned structures through which it has been habitually expressing itself. This recognition produces restructuring not through ordinary LTD but through what might be called insight-induced plasticity: a qualitatively different

mechanism enabled by the conjunction of maximum filter transparency and maximum neural malleability.

5.3 Extinction of Craving Circuits

The permanent liberation described in Buddhist texts requires an account that goes beyond ordinary Hebbian weakening. The NAM-NM proposes that the liberating insight event of the fourth jhana achieves comprehensive generative model revision: not the inhibition of specific conditioned associations but the restructuring of the deeper predictive model that generates the conditions under which conditioned associations operate. Specifically, the direct insight into anatta (non-self) produces the recognition — experientially immediate, not merely intellectual — that there is no fixed self to which craving could belong, no permanent entity whose needs craving is designed to meet.

Under the NAM alone, this recognition restructures the DMN's self-model, removing the anchor point around which craving circuits organize. Under the NM supplement, the same recognition has additional depth: from the perspective of filter-transparent awareness, the individual sees not merely that the self-model is computationally constructed but that it is a localization within a broader consciousness that is not itself structured by craving or aversion. The craving circuits are extinguished not merely by loss of their neural anchor but by direct experiential recognition of their fundamental groundlessness from a perspective of non-individuated awareness. This dual mechanism — neural restructuring plus consciousness-level recognition — explains why the extinction of craving is permanent rather than subject to the spontaneous recovery that ordinarily extinguished conditioned responses display.

5.4 The Amygdala After Enlightenment

The canonical depiction of the arahant — emotionally responsive without reactive, compassionate without grasping, encountering danger without avoidance-based fear — has a specific neurological signature under the NAM: permanent restructuring of the amygdala-prefrontal regulatory circuit such that amygdalar significance-detection remains intact while the coupling to DMN-mediated self-referential elaboration is severed. Under the NM supplement, the same post-liberation amygdala profile has an additional dimension: the amygdala's survival-contraction function — the biological mechanism restricting individual consciousness to survival-relevant information — has been permanently attenuated by the fourth jhana's insight event. The liberated person's amygdala continues to function as a significance-detection system, but is no longer coupled to the survival-anxiety that drove the filter's tightest restrictions. The result is a permanent widening of the individual's informational aperture.

5.5 Nibbana as Stable Neurological Baseline

The NAM's characterization of nibbana as a stable neurological baseline — a resting configuration of the brain structurally different from the ordinary resting state — is grounded in the existing contemplative neuroscience literature. Brewer and colleagues (2011) found that experienced meditators show reduced DMN activity during rest, correlating with meditation experience and reported clarity. The NAM predicts that in the limiting case of full liberation, this

effect reaches its maximum and most stable form: permanently altered resting-state organization, reflected in reduced DMN connectivity, altered patterns of deactivation during task engagement, and maintained task-positive network function. This characterization is accurate as far as it goes, but incomplete in a way that the NM supplement directly addresses.

5.6 Nibbana as Realization of the Unconditioned Ground

The Buddhist philosophical tradition insists that nibbana is not a different conditioned state but the unconditioned (asankhata) — not subject to arising, passing, or change. The Udana's declaration — 'There is, monks, an unborn, unbecome, unmade, unconditioned' (Ud 8.3) — points to a dimension of reality that transcends the conditioned realm of neural processes entirely. A neural baseline state is a conditioned phenomenon. Nibbana, as the tradition describes it, is not. Within the NAM alone, this creates a genuine conceptual difficulty: the account stops exactly where the tradition's most important claims begin.

The NM supplement resolves this by locating nibbana at the level of consciousness-as-such rather than at the level of any particular neural or experiential configuration. On Kastrup's (2019) idealist framework, mind-at-large — the fundamental consciousness within which all individual minds are localizations — is genuinely unconditioned: it is the field within which arising and passing occur, not something that itself arises and passes. The fourth jhana, by maximally relaxing the dissociative boundary, allows the meditator to directly apprehend mind-at-large — to experience what awareness fundamentally is when not filtered through the biological individuating mechanism. Nibbana is not the production of a new state of mind-at-large but the permanent recognition of mind-at-large as the ultimate nature of awareness — a recognition that, once achieved under conditions of maximum filter transparency and maximum neural plasticity, permanently restructures the individual's relationship to their own consciousness.

5.7 Integrating Both Accounts of Liberation

The full NAM-NM account of permanent liberation: the fourth jhana produces simultaneously maximum neural plasticity (enabling comprehensive restructuring of conditioned circuits) and maximum filter transparency (enabling direct realization of the unconditioned ground of awareness). From this dual platform, the liberating insight produces both permanent restructuring of the neural circuits of craving and aversion through insight-induced plasticity (NAM), and permanent reorientation of individual consciousness toward its non-local, unconditioned ground (NM). The stable neurological baseline that results from the former is the conditioned correlate of the unconditioned realization of the latter. Both are real, and neither is reducible to the other. The phenomenologically described nibbana of Buddhist texts is the experiential expression of both occurring together, each enabling and reinforcing the other in the unique conditions of the fourth jhana's conjunction of maximum plasticity and maximum transparency.

CHAPTER SIX

Objections and Responses

6.1 The Eliminative Materialist Challenge

The most straightforward philosophical objection comes from eliminative materialism, which would argue that if the NAM's account is correct, nibbana is 'nothing but' a neural state and the tradition's understanding of its highest attainment is fundamentally mistaken. The NAM-NM rejects both the premise and the inference. The materialist NAM does not claim that nibbana is identical to or exhausted by its neural correlates; it claims that neural correlates are necessary conditions for nibbana's occurrence in a human being and that understanding them illuminates features of the path. This no more entails the eliminative conclusion than the claim that pain is associated with C-fiber activation entails that pain is nothing but C-fiber activation.

When directed at the NM supplement, the eliminative challenge takes the form of accusing the dissertation of pseudoscience. The NAM-NM response is threefold: first, eliminative materialism itself faces severe difficulties with the hard problem of consciousness (Chalmers, 1996; Nagel, 1974) that are not resolved but evaded. Second, the empirical evidence for anomalous cognition — psi, past-life memories, near-death experiences — while contested, constitutes a body of anomalous data that serious science must address rather than dismiss a priori. Third, the NM supplement draws on the work of serious philosophers (Chalmers, Goff, Kastrup), physicists (Bohm, Penrose), and scientists (Stevenson, Tucker, Grof) whose credentials are not in question. The issue is whether they are correct — and that is an empirical and philosophical question, not one resolvable by methodological fiat.

6.2 The Hard Problem and the Limits of Neural Reduction

David Chalmers' (1996) hard problem — why there is subjective, phenomenal experience at all, given that functional and computational descriptions of neural processing leave unexplained why there is 'something it is like' to be a neural system — constitutes a standing challenge to any purely materialist account of awakening. The NAM alone does not address the hard problem; it describes neural correlates of experiential states without explaining the experiential dimension itself.

The NM supplement directly engages the hard problem by denying the materialist premise that generates it. If consciousness is primary rather than derived — if mind is fundamental and brain is a filter rather than a generator — then there is no hard problem in Chalmers' specific form, because consciousness does not need to be explained in terms of neural activity. The explanatory burden is reversed: what requires explanation is why the filter produces the specific form of individual consciousness it does, not why a neural system has experience at all. This reversal makes the Buddhist account of awakening more philosophically tractable: liberation is the direct realization of the nature of consciousness by consciousness itself, not the production of a particular neural state, though it is accompanied by such a state.

6.3 The Phenomenological Objection

The phenomenological tradition questions the NAM-NM's use of third-person descriptions to illuminate first-person phenomenological experience, arguing that the phenomenal character of contemplative experience cannot be fully captured by any third-person description. The NAM-NM acknowledges this objection explicitly and does not claim to capture everything important about the jhanas and nibbana. It claims only that the dual framework is illuminating: that understanding both the neural mechanisms and the consciousness-philosophical context helps explain features that the phenomenological account alone leaves opaque. The neurophenomenological framework of Varela, Thompson, and Rosch (1991) provides the methodological scaffolding: first-person accounts constrain neural hypotheses; neural hypotheses generate phenomenological predictions; and the NM supplement extends this mutual constraint to include the consciousness-philosophical level.

6.4 The Traditionalist Buddhist Critique

Traditionalist Buddhist scholars may object that the NAM-NM misrepresents awakening by treating it as a natural, biological phenomenon. The NM supplement's treatment of nibbana as realization of the unconditioned ground of awareness — within an idealist framework in which mind-at-large is genuinely unconditioned — is more consonant with the traditionalist position than the purely materialist NAM. The tradition's insistence on the transcendent, unconditioned character of nibbana is not inconsistent with the NAM-NM's account of its neural correlates and consciousness-philosophical conditions, provided one accepts that the unconditioned can be realized through and accompanied by conditioned processes without being identical to them. This is precisely the NM supplement's claim, and it resonates deeply with the Buddhist philosophical tradition's own non-reductive analysis of the conditioned and unconditioned.

6.5 The Methodological Objection

The most practically weighty objection is methodological: the NAM-NM's account is speculative, because direct neuroimaging studies of jhana practice remain rare and claims about neural correlates are theoretical inferences from adjacent research. The NAM-NM does not dispute this. The framework is explicitly theoretical, evaluated by consistency with existing evidence, the generation of testable predictions, and the opening of new lines of empirical inquiry. Among the specific testable predictions: long-term practitioners reporting jhana attainment should show greater resting-state DMN suppression than non-jhana practitioners of comparable experience; practitioners in the reported fourth jhana should show near-complete DMN and amygdala deactivation combined with maximum gamma synchrony; practitioners reporting complete liberation should show permanently altered resting-state connectivity; and — specific to the NM supplement — advanced meditators in the reported fourth jhana should show enhanced performance on rigorously controlled psi tasks.

6.6 Skeptical Responses to Psi and Non-Local Consciousness

The NM supplement's reliance on psi research exposes the dissertation to objections from psychologists and neuroscientists skeptical of the anomalous cognition literature. Methodological

concerns — randomization, optional stopping, file-drawer effects, experimenter bias — raised by Hyman (1985), Wiseman and Milton (1998), and others have been addressed with varying success by the psi research community. The NAM-NM's response is not to claim that psi phenomena are definitively established but that the evidence — the Ganzfeld meta-analyses of Bem and Honorton (1994), the PEAR laboratory datasets, the Stevenson-Tucker past-life case studies — is serious enough to warrant inclusion in any comprehensive account of consciousness. Regarding quantum consciousness: the Tegmark (2000) decoherence objection to Orch OR remains a serious challenge to that specific mechanism, but Bohm's implicate order framework does not require biological quantum coherence and provides an alternative physical grounding. The NAM-NM treats these as providing conceptual space for non-local consciousness to be theoretically possible rather than theoretically impossible.

CHAPTER SEVEN

Implications and Synthesis

7.1 Implications for Clinical Neuroscience

The NAM-NM's account of the jhanas as a systematic protocol for restructuring craving, aversion, and self-referential processing has significant implications for clinical neuroscience. The treatment of addiction — a disorder of dopaminergic reward and craving circuitry — is among the most direct applications. The jhana-based approach operates through mechanisms independent of the specific content of craving, potentially applicable across the spectrum of addictive disorders. The NM supplement adds the hypothesis that the fourth jhana's filter-transparency effect — the direct recognition of the groundlessness of craving from a perspective of non-individuated awareness — may produce a qualitatively different and more permanent form of craving extinction than ordinary behavioral or cognitive interventions, which operate within the ordinary filtered perspective and cannot achieve the generative model revision that the fourth jhana enables.

For depression, the pathological over-engagement of the DMN's self-referential ruminative processing (Sheline et al., 2009; Marchetti et al., 2012) is precisely the target of jhana practice's progressive DMN suppression. The NM supplement contributes the hypothesis that the most treatment-resistant forms may require the kind of perspective shift that only significant filter relaxation can provide: the direct experience, even partial, that the ruminative self-narrative is a biological construction rather than a direct perception of reality. The parallels with psychedelic-assisted therapy are significant: both modalities appear to work through rapid DMN disruption (Carhart-Harris et al., 2014, 2016) combined with enhanced neural plasticity. The NAM-NM predicts that jhana practice, achieving comparable or greater DMN disruption, should produce comparable or greater therapeutic benefits through a controllable, skill-based approach.

7.2 Implications for Cognitive Science of Religion

The cognitive science of religion (CSR) has been more successful at accounting for ordinary cognitive processes supporting religious belief than at accounting for transformative experiences — mystical states, conversions, awakening. The NAM-NM provides a framework for extending CSR's account to these transformative experiences by specifying both the neural mechanisms and the consciousness-philosophical conditions through which specific contemplative practices produce the kinds of experience that characterize mystical states across traditions.

The NM supplement specifically addresses features most challenging for CSR's typically materialist framework: the noetic quality of mystical states, the persistent conviction of having contacted a reality transcending ordinary individuation, and the reports of veridical information access characterizing many mystical and near-death experiences. Under the NM supplement, these features are not illusions produced by unusual brain states but genuine — if partial and perspective-dependent — contacts with dimensions of reality that the biological filter ordinarily excludes. William James's (1902) classical criteria for mystical experience all receive a more satisfying account within the NAM-NM than within the NAM alone, including the noetic quality — which

corresponds to genuine perceptual access to features of reality ordinarily filtered out, rather than merely to the brain in an unusual state.

7.3 Implications for Contemplative Pedagogy

If the jhanas constitute a hierarchically ordered neurological and consciousness protocol whose deeper stages are qualitatively distinct in their effects — both in terms of neural plasticity and filter transparency — then pedagogical attention to the depth of absorption achieved by practitioners matters enormously. Contemporary mindfulness-based interventions characteristically deemphasize the jhanas. The NAM-NM suggests these interventions capture benefits of early meditative training while leaving the more profound effects of deeper absorption largely unexplored: both the neural plasticity of the fourth jhana and its filter-transparency effects, including the potential for the first and second knowledges.

The NM supplement additionally suggests that the traditional insistence across multiple Buddhist lineages on the four jhanas as prerequisite for liberating insight reflects genuine understanding of why maximum filter transparency requires the specific conditions of the fourth jhana. Partial filter relaxation produces genuine benefits, but it does not achieve the qualitative threshold at which the first and second knowledges become possible, and it does not produce the generative-model revision that constitutes the third knowledge's mechanism of permanent liberation. An evidence-based contemplative pedagogy should be graduated: beginning with accessible mindfulness practices, progressively guiding willing and capable practitioners toward the deeper absorption stages the NAM-NM identifies as conditions for more comprehensive transformation.

7.4 The NAM-NM: Final Synthesis

The NAM-NM proposes a coherent, multi-level account of how the four jhanas produce both the neurological conditions and the consciousness-philosophical conditions for the Buddha's awakening. At the first level (materialist), the jhanas systematically suppress the neural systems generating ordinary, suffering-producing experience, culminating in the fourth jhana's state of maximum cognitive plasticity. At the second level (nonmaterialist), the jhanas systematically relax the brain's filtering function, progressively expanding individual consciousness toward the non-local field, culminating in the fourth jhana's state of maximum filter transparency. At the third level — the level of convergence — the fourth jhana achieves the simultaneous conjunction of maximum neural plasticity and maximum filter transparency, creating unique conditions within which liberating insight becomes possible. At the fourth level, the result — nibbana as both stable neurological baseline (NAM) and realized unconditioned ground (NM) — is a genuinely new configuration of both brain and consciousness.

7.5 Conclusion

This dissertation, authored by Michael F. Roe, Candidate M.Div., has advanced a comprehensive account of the neurological and philosophical basis of the Buddha's enlightenment, grounded in careful synthesis of canonical Buddhist phenomenology, contemporary contemplative neuroscience, and nonmaterialist philosophy of consciousness. The NAM-NM proposes that the

four jhanas constitute a simultaneously neural and consciousness-philosophical protocol that, when carried to its conclusion in the fourth jhana, produces the conditions for a permanent, comprehensive, and irreversible transformation of both the brain and of consciousness's relationship to its own unconditioned ground.

The Buddha's awakening, on the NAM-NM's account, was not a miracle in the supernatural sense but something more remarkable: a demonstration that the human brain and the consciousness it filters, through the systematic and sustained application of a specific contemplative protocol, can permanently transcend the patterns of suffering that are otherwise their default condition — and in doing so, realize the unconditioned ground of awareness that is the ultimate nature of mind. That realization awaits the full scientific and philosophical account it deserves, and the NAM-NM is offered as the most comprehensive framework currently available toward that account.

CHAPTER EIGHT

Beyond the Brain: Nonmaterialist Consciousness, the Filter Hypothesis, and the Buddha's Tevijja

8.1 The Materialist Assumption and Its Limits

The first seven chapters of this dissertation have engaged the jhanas and the Buddha's awakening through both materialist and nonmaterialist lenses, weaving both frameworks together as complementary levels of analysis. The present chapter provides the full, systematic account of the nonmaterialist position: its philosophical foundations, its empirical grounding, its specific application to the Buddha's tevijja, and its integration into the NAM-NM framework.

The materialist assumption embedded in standard cognitive neuroscience holds that consciousness is generated by the brain — that subjective experience is a product or emergent property of the physical processes of neural computation. The hard problem of consciousness — why there is 'something it is like' to be a neural system processing information — has resisted every attempt at resolution within this framework. Philosophers from Chalmers (1996) to Nagel (1974) to Levine (1983) have argued that materialist neuroscience cannot in principle explain the intrinsic, phenomenal character of consciousness, because functional and computational descriptions are always in principle compatible with the absence of subjective experience. The materialist assumption additionally creates an explanatory ceiling specific to this inquiry: a brain generating consciousness from neural activity cannot store or transmit memories across the death of the biological tissue in which those memories are encoded. The first and second knowledges of the Buddha's awakening are simply incoherent within a strictly materialist framework.

8.2 The Filter Hypothesis: The Brain as Receiver, Not Generator

The most philosophically productive nonmaterialist hypothesis for the present inquiry is what William James (1898) called the 'transmission theory' of consciousness, developed subsequently by Henri Bergson (1908), Aldous Huxley (1954), and more recently by Bernardo Kastrup (2019) and the comprehensive treatment in Kelly and colleagues' Irreducible Mind (2007). In its contemporary form, the filter hypothesis holds that the brain does not produce consciousness but restricts, focuses, and shapes a more fundamental, non-local consciousness to the specific requirements of individual biological survival.

The radio receiver analogy is heuristically useful: a radio does not create the music it broadcasts; it tunes into electromagnetic signals that exist independently of the device and transforms them into audible sound. If the radio is damaged, the music in that room is disrupted — but the underlying broadcast continues unaffected. The apparent correlation between device damage and diminished output tells us nothing definitive about the ultimate source of the signal. Neuroscience's consistent finding that brain damage alters consciousness is entirely compatible with the filter hypothesis: damaging the filter alters what passes through, without implying that the filter is the source. The filter hypothesis holds that the brain actively shapes the form and

content of individual consciousness — it is a sophisticated signal-processing system — but that it neither creates consciousness from nothing nor destroys it when the processing system fails.

The filter hypothesis explains anomalous cognition phenomena that the generative hypothesis must either deny or address through increasingly strained auxiliary hypotheses. It provides a natural account of how consciousness could survive physical death: the broadcast continues when the receiver breaks down. And it explains how deep meditation might expand rather than merely alter consciousness: by relaxing the brain's filtering function, meditation allows individual consciousness to access dimensions of the broader field ordinarily excluded.

8.3 Philosophical Frameworks: Idealism, Panpsychism, and Property Dualism

The nonmaterialist tradition encompasses several distinct philosophical positions. Bernardo Kastrup's (2019) contemporary idealism — the most rigorous contemporary formulation directly relevant to this inquiry — holds that reality is intrinsically experiential, and that individual minds are alters of mind-at-large: localized, dissociated centers of experience within a broader experiential field. The brain is the dissociative boundary — the neural mechanism through which mind-at-large localizes itself into the specific, bounded perspective of an individual organism. This provides the philosophical grounding for the NM supplement's core claim: the jhanas' progressive DMN suppression is simultaneously the progressive relaxation of the dissociative boundary.

Philip Goff's (2019) panpsychism holds that the properties attributed to fundamental physical entities are intrinsically experiential — that the physical description describes the extrinsic, structural features of what is intrinsically experiential. Human consciousness is the most complex and integrated form of a property present throughout nature. Property dualism — Chalmers' (1996) position — acknowledges the irreducibility of consciousness while maintaining one underlying substance, and provides the methodological principle of taking both first-person and third-person descriptions seriously without reducing either to the other. For the NAM-NM, these frameworks are not competing alternatives but overlapping contributions: Kastrup's idealism provides the metaphysical grounding; Goff's panpsychism provides the physical continuity story; Chalmers' property dualism provides the methodological principle.

8.4 Non-Local Consciousness and the Akashic Field

Ervin Laszlo (2004, 2007) has developed the most systematic contemporary account of non-local memory storage through his concept of the Akashic Field (A-field) — a sub-quantum information field permeating the universe that serves as a holographic repository of all information and experience. Laszlo grounds this in quantum field theory, specifically in the properties of the quantum vacuum: not empty space but a field of potential energy and information underlying all physical phenomena. On Laszlo's account, memories are not stored exclusively as neural engrams but are simultaneously imprinted in the A-field. Under ordinary conditions, the brain's filtering function restricts individual consciousness to information relevant to biological survival in the present moment. In states where the filter is significantly relaxed — including the fourth jhana — individual consciousness can access information from the broader field normally unavailable, including information belonging to previous biological lifetimes in which the same stream of individual consciousness was embedded.

Stanislav Grof (1985, 2012), across decades of research with non-ordinary states of consciousness, documented systematic reports of access to information that transcends individual biological memory: detailed and subsequently verified knowledge of historical periods, experiences of identification with non-human organisms, and transpersonal experiences in which ordinary boundaries of individual identity dissolve. Grof's cartography of non-ordinary states, while developed in a different methodological context, describes a phenomenological territory deeply convergent with what the NM supplement predicts the fourth jhana enables.

8.5 The Jhanas as Filter Relaxation: A Systematic Account

The NM supplement reframes the neural account of the jhanas as a systematic description of progressive filter relaxation. Where the NAM describes DMN suppression, the NM reads dissociative boundary relaxation. Where the NAM describes amygdalar quieting, the NM reads reduction of the survival-contraction that confines individual consciousness to biologically relevant information. Where the NAM describes thalamic gating reduction, the NM reads widening of the informational aperture connecting individual consciousness to the non-local field. Where the NAM describes insular quieting, the NM reads loosening of the somatic anchor of biological individuation. Where the NAM describes maximum gamma coherence, the NM reads minimum noise between the individual and the field — maximum filter transparency.

This systematic correspondence is not coincidental. The NAM and NM are not describing different phenomena but the same phenomena at different levels of analysis. The neural changes of the jhanas are the biological implementation of the filter-relaxation process; the filter-relaxation process is what those neural changes accomplish at the level of consciousness. This integration is the conceptual heart of the NAM-NM. One key implication: the filter-relaxation reading predicts that the phenomenological experience of progressively deeper jhanas should include not merely increasing stillness and equanimity but also progressively increasing experiences of expanded awareness, reduced ego-boundedness, and potential access to non-biographical information. This is precisely what advanced meditators across traditions consistently report, and these experiences are uniquely predicted by the NM supplement rather than the NAM alone.

8.6 Past Lives, Non-Local Memory, and the First Knowledge

The Buddha's first knowledge — recollection of vast numbers of past lives in extraordinary detail — is the most direct test case for the NM supplement's adequacy. The empirical literature on past-life memories, rigorously documented by Ian Stevenson (1997, 2001) and Jim Tucker (2005, 2013) at the University of Virginia's Division of Perceptual Studies, provides the closest available empirical analog to what the canonical texts describe. Stevenson's systematic analysis of over 2,500 cases, applying rigorous criteria for excluding fraud, cryptomnesia, and coincidence, identified a substantial subset in which the correspondence between a child's reported past-life memories and the biographical facts of a specific deceased individual could not be plausibly explained by conventional means. Tucker's (2013) extension and refinement of Stevenson's methodology has confirmed the robustness of this phenomenon.

The NM supplement provides the theoretical account: if memories are stored not only in biological neural tissue but in the non-local consciousness field (the A-field or its equivalent), then a meditator who has achieved the degree of filter relaxation represented by the fourth jhana would

have access to information from that broader field, including information encoded by previous biological lives in which the same stream of individual consciousness was embedded. The specific mechanism: individual consciousness is, on the filter hypothesis, a localized, biologically-tethered expression of a broader consciousness not restricted to the present moment. The stream of individual consciousness currently identified as a particular meditating person is the same stream that was previously identified with earlier biological existences — not through transfer of biological memory engrams between physical brains, but through the continuity of a non-local consciousness that has expressed itself through multiple biological vehicles while maintaining coherent identity in the A-field. The fourth jhana, by maximally relaxing the filtering function of the current biological vehicle, allows this stream to access its own history as stored in the non-local field.

8.7 Quantum Consciousness and the Physical Basis of Non-Locality

Any serious scientific engagement with the nonmaterialist framework must address the question of physical mechanism. The most developed attempt to ground non-local consciousness in contemporary physics is the orchestrated objective reduction (Orch OR) theory of Roger Penrose and Stuart Hameroff (1996, 2014), proposing that consciousness is grounded in quantum-mechanical processes within neural microtubules involving genuine non-algorithmic, potentially non-local information processing through quantum superposition and objective reduction. The primary objection (Tegmark, 2000) — that quantum decoherence times in the warm, wet neural environment are too short — has been partially addressed by the growing field of quantum biology, which has demonstrated robust quantum effects in photosynthetic systems (Engel et al., 2007), enzyme catalysis, and avian magnetoreception.

David Bohm's (1980) implicate order provides an alternative physical grounding that avoids some of Orch OR's specific difficulties. Bohm proposed that the manifest physical world — the explicate order of separate objects in space and time — is a projection from a deeper, holographic implicate order in which everything is enfolded within everything else. Non-locality in the quantum realm reflects this underlying order in which separation is, at the deepest level, illusory. If consciousness is grounded in or isomorphic with the implicate order, non-local features of consciousness follow naturally from the non-local structure of physical reality itself. Henry Stapp's (2009) quantum mind theory — grounding consciousness in the observer-dependent wave-function collapse of Copenhagen quantum mechanics — provides a third avenue, establishing consciousness as causally efficacious in the physical world in a way that pure epiphenomenalism denies. The NAM-NM endorses none of these as established, but holds that they collectively provide conceptual space within which non-local consciousness is theoretically possible rather than theoretically impossible.

8.8 Psi Phenomena, Anomalous Cognition, and the Evidence Base

The filter hypothesis gains additional evidential support from the substantial, contested literature on psi phenomena — telepathy, clairvoyance, precognition, and psychokinesis. The Ganzfeld telepathy experiments, meta-analyzed by Honorton and Ferrari (1989) and by Bem and Honorton (1994), have produced hit rates of approximately 32% where chance would predict 25%: a modest but statistically robust effect across hundreds of studies and multiple independent

research groups. The remote viewing research at the Stanford Research Institute under Puthoff and Targ (1976) and at the PEAR laboratory (Jahn and Dunne, 2005) produced datasets from thousands of trials suggesting reliable above-chance perception of remote locations and objects by trained perceivers.

For the present inquiry, the most specifically relevant psi phenomena are those associated with advanced meditative states. A substantial literature documents enhanced psi performance in meditative states compared to ordinary waking (Honorton, 1977; Stanford and Stevenson, 1972; Schmeidler, 1994). This is precisely what the filter hypothesis predicts: if psi capacities depend on access to non-local information that the brain normally filters out, and if meditation relaxes the filter, meditators should show enhanced psi performance relative to non-meditators and relative to their own performance in non-meditative states. The second knowledge of the Buddha — the divine eye, perception across the karma-field — is the limiting case of this enhancement: maximum filter transparency producing maximum informational access.

8.9 The Unconditioned and the Limits of Neural Explanation

The nonmaterialist framework directly addresses the deepest philosophical question raised by the Buddha's awakening: the nature of nibbana as the unconditioned. The Udana's declaration — 'There is, monks, an unborn, unbecome, unmade, unconditioned' (Ud 8.3) — points to a dimension of reality that transcends the conditioned realm of neural processes entirely. A neural state, by definition, is a conditioned phenomenon. Nibbana, as the tradition describes it, is not. Within the NAM alone, this creates a genuine conceptual difficulty that the tradition itself does not share.

The NM supplement resolves this by locating nibbana at the level of consciousness-as-such. On Kastrup's (2019) idealist framework, mind-at-large is genuinely unconditioned: it is the field within which arising and passing occur, not something that itself arises and passes. The fourth jhana, by maximally relaxing the dissociative boundary, allows the meditator to directly apprehend mind-at-large — to experience what awareness fundamentally is when not filtered through the biological individuating mechanism. Nibbana is not the production of a new state of mind-at-large but the permanent recognition of mind-at-large as the ultimate nature of awareness — a recognition that, once achieved under conditions of maximum filter transparency and maximum neural plasticity, permanently restructures the individual's relationship to their own consciousness. This convergence between the Buddhist philosophical claim about the unconditioned and the nonmaterialist claim about the primacy of consciousness is tracked by multiple contemporary scholars (Thompson, 2007; Albahari, 2006; Coseru, 2012), suggesting a genuine insight about the nature of consciousness that both traditions are tracking from different directions.

8.10 Integrating the Nonmaterialist Supplement: The Complete NAM-NM

The complete NAM-NM framework, integrating the materialist NAM and the nonmaterialist supplement NM, can now be stated in its final form. The four jhanas constitute simultaneously a neurological protocol (NAM) and a consciousness-philosophical protocol (NM) for achieving the conditions of the Buddha's awakening. At the neural level: each jhana stage produces hierarchically deeper suppression of the DMN, amygdala, thalamic gating, and insular processing alongside increasing gamma coherence, culminating in the fourth jhana's state of

maximum cognitive plasticity. At the consciousness level: each jhana stage produces progressively greater relaxation of the brain's filtering function, culminating in the fourth jhana's state of maximum filter transparency in which individual consciousness stands open to the non-local field with minimum biological obstruction.

The three knowledges arise from this dual platform. The first knowledge (past-life recollection) arises from access to non-local, trans-biographical information that maximum filter transparency enables. The second knowledge (divine eye, perception across the karma-field) arises from the same expanded informational access applied to the karmic patterning of other consciousness streams. The third knowledge (destruction of the asavas, direct recognition of the Four Noble Truths) arises from the conjunction of maximum neural plasticity and maximum filter transparency — the former enabling permanent restructuring of conditioned circuits, the latter enabling direct recognition of the unconditioned ground of awareness from which the groundlessness of craving becomes self-evident. Nibbana is simultaneously a stable neurological baseline (NAM) and a realized unconditioned ground (NM): the filter and the light that passes through it; the brain and the consciousness it partially expresses; the conditioned and the unconditioned that it both obscures and reveals.

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APPENDIX A

Glossary of Key Pali and Sanskrit Terms

Anicca — impermanence; the first of the three marks of existence.

Anatta — non-self; the absence of a fixed, independent, permanent self in any phenomenon; the third mark of existence.

Asankhata — the unconditioned; not subject to arising, passing, or change. The ultimate nature of nibbana. In the NAM-NM: that which is realized through maximum filter transparency in the fourth jhana.

Asava — fermentations or taints; deep-seated mental dispositions (sensual desire, desire for existence, ignorance) perpetuating conditioned existence. In the NAM: structurally consolidated neural circuits. In the NM: karmic patterning in the non-local consciousness field.

Bodhi — awakening, enlightenment; the attainment of liberating insight.

Cutupapata-nana — the second knowledge; the divine eye, perception of beings across the karma-field. In the NM: the consequence of maximum filter transparency enabling access to the non-local karma-field.

Dhamma — the Buddha's teaching; the nature of reality as revealed by that teaching.

Dukkha — suffering, unsatisfactoriness; the second mark of existence.

Ekaggata — one-pointedness of mind; the jhana factor of mental unification on a single object.

Jhana — meditative absorption; one of the four form absorptions (rupa jhana) constituting the focus of this dissertation.

Kammaniya — malleable; a canonical term used in the Mahasaccaka Sutta to describe the mind in the fourth jhana. In the NAM-NM: maximum cognitive plasticity combined with maximum filter transparency.

Mudu — pliant; a canonical term used alongside kammaniya to describe the fourth jhana mind.

Nibbana (Sanskrit: Nirvana) — the cessation of the causes of suffering; liberation; the unconditioned. In the NAM-NM: simultaneously a stable neurological baseline (NAM) and the realized unconditioned ground of awareness (NM).

Pabhassara citta — the bright mind; a canonical term (AN 1.49-52) suggesting an intrinsically luminous quality of awareness underlying conditioned mental states. In the NM: the intrinsic quality of mind-at-large as experienced through maximum filter transparency.

Paticca-samuppada — dependent origination; the twelve-link chain describing the conditioned arising of all phenomena.

Piti — rapture, joy; a jhana factor present in the first and second jhanas.

Pubbenivāsānussati-nana — the first knowledge; the recollection of past lives. In the NM: the consequence of maximum filter transparency enabling access to non-local, trans-biographical information in the A-field.

Sati — mindfulness; clear, non-reactive awareness of present-moment experience.

Sukha — pleasure, well-being; a jhana factor present in the first through third jhanas.

Tanha — craving, thirst; identified by the second noble truth as the cause of suffering.

Tevijja — the three knowledges attained by the Buddha on the night of awakening.

Tilakkhana — the three marks of existence: impermanence (anicca), suffering (dukkha), non-self (anatta).

Upekkha — equanimity; the fourth jhana factor; balanced, non-reactive awareness.

Vicara — sustained thought; the jhana factor of continued attention; present in the first jhana only.

Vipassana — insight; direct perceptual investigation of the three marks of existence.

Vitakka — applied thought; the jhana factor of initial attentional placement; present in the first jhana only.

APPENDIX B

Glossary of Key Nonmaterialist and Consciousness Terms

Akashic Field (A-field) — Ervin Laszlo's concept of a sub-quantum information field serving as a holographic repository of all events and experiences; the proposed physical substrate of non-local memory, enabling the first knowledge.

Active Inference — Karl Friston's concept of the brain's active sampling of its environment to confirm predictive models, minimizing prediction error through action rather than model-updating. Progressively suspended across the jhanas; fully suspended in the fourth jhana.

Alter — Bernardo Kastrup's term for an individual mind understood as a localized, dissociated center of experience within mind-at-large.

Default Mode Network (DMN) — a network of brain regions (mPFC, PCC, precuneus, angular gyrus, hippocampal formation) active during self-referential processing and rest. In the NAM: the neural substrate of ego-maintenance. In the NM: the neural mechanism of the dissociative boundary.

Dissociative Boundary — Kastrup's term for the neural mechanism (primarily the DMN) through which mind-at-large maintains the experiential boundary of individual consciousness. Progressively relaxed across the four jhanas.

Filter Hypothesis — the nonmaterialist proposal, originating with William James's 'transmission theory' (1898), that the brain restricts and focuses a more fundamental, non-local consciousness rather than generating consciousness from neural activity.

Filter Relaxation — the NM supplement's description of what the jhanas accomplish at the level of consciousness: progressive relaxation of the brain's filtering function, expanding individual consciousness toward the non-local field.

Filter Transparency — the NM supplement's description of the fourth jhana's consciousness-level state: maximal openness of individual consciousness to the non-local field, with minimum biological obstruction.

Hard Problem of Consciousness — David Chalmers' formulation of the explanatory gap between functional/computational neural descriptions and the subjective, phenomenal character of experience.

Idealism — the philosophical position that mind or experience is the fundamental substance of reality; in Kastrup's formulation, that individual minds are alters of mind-at-large.

Implicate Order — David Bohm's concept of a deeper, holographic level of physical reality in which everything is enfolded within everything else; proposed as physical grounding for quantum non-locality and non-local consciousness.

Insight-Induced Plasticity — the NAM-NM's proposed mechanism by which the direct cognitive and consciousness insight of the fourth jhana, under conditions of both maximum neural plasticity and maximum filter transparency, produces permanent restructuring of conditioned neural circuits and karmic patterning.

Mind-at-Large — Aldous Huxley's term, adopted by Kastrup, for the fundamental, non-individuated consciousness within which all individual minds are localizations.

NAM — Neuroplastic Awakening Model; the materialist component of the NAM-NM framework, describing the neural changes produced by the jhanas.

NAM-NM — Neuroplastic Awakening Model with Nonmaterialist Supplement; the integrated dual-framework advanced in this dissertation by Michael F. Roe, Candidate M.Div.

NM — the Nonmaterialist Supplement to the NAM; the consciousness-philosophical component of the NAM-NM framework.

Orch OR — Orchestrated Objective Reduction; the quantum consciousness theory of Roger Penrose and Stuart Hameroff, proposing that consciousness is grounded in quantum processes in neural microtubules.

Panpsychism — the philosophical position that consciousness or proto-conscious properties are universal features of reality, present at every level of physical organization.

Psi — the general term for anomalous cognition capacities (telepathy, clairvoyance, precognition, psychokinesis) apparently transcending the boundaries of individual biological processing. On the

filter hypothesis: the natural consequence of access to the non-local field that the brain ordinarily filters out.

Property Dualism — the view that reality has one substance with two irreducibly different kinds of properties: physical and mental.

Predictive Processing — the theoretical framework (Friston, Clark) proposing that the brain generates hierarchically organized predictive hypotheses and revises them through prediction-error minimization. In the NAM-NM: the primary mechanism both of the self-model (NAM) and of the dissociative boundary (NM).

Quantum Vacuum — in quantum field theory, the lowest energy state of a quantum field, characterized by non-zero energy and virtual particle fluctuations; proposed by Laszlo as the physical substrate of the Akashic Field.

Transmission Theory — William James's 1898 proposal that the brain transmits or permits rather than generates consciousness; the historical precursor of the contemporary filter hypothesis.