

THE RESTORATION OF SOURCE-MONITORING PRECISION

A Cognitive-Remediation Practice for vmPFC Source-Monitoring Degradation, Derived from the Path Architecture of the Neurological Qabalah

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Abstract

This paper presents a cognitive-remediation practice for ventromedial prefrontal source-monitoring degradation, derived from the path architecture of the Neurological Qabalah and grounded in the Source Monitoring Framework. The condition addressed is precisely defined: degradation of the vmPFC's layer-5 pyramidal-neuron precision architecture — whether through serotonergic remodelling, neurodevelopmental substrate, or other cause — produces a progressive merger of internally generated and externally derived content, culminating in pseudo-hallucinatory phenomena and self-amplifying fear-feedback loops. Standard pharmacological interventions act at the receptor level and cannot repair structural precision degradation; standard psychological interventions presuppose the very source-monitoring function they aim to develop. The remediation proposed addresses the mechanism of failure identified by Johnson, Hashtroudi, and Lindsay: source errors arise from similarities in the qualitative features of mental representations from internal and external sources. The practice deliberately and repeatedly exercises the two distinct pathways through which content reaches analytical categorisation — an external path and an internal path that recruit physically distinct relay structures and therefore arrive carrying distinct qualitative features — training the system to apply deliberately the feature distinction that automatic source-monitoring once applied below the threshold of attention. The paper specifies the neuroanatomy of the two paths, the eyes-open and eyes-closed switching of primary visual cortex connectivity that anchors them, the step-by-step practice, and the three converging mechanisms of remediation: qualitative-feature reinforcement, pathway-specific Hebbian development, and anterior-cingulate metacognitive substitution. It situates the practice within a wider remediation context, including its relation to pharmacological support construed at the level of mechanism class, and grounds its plausibility in the cognitive-remediation literature.

Keywords: Source Monitoring · vmPFC · Layer-5 Pyramidal Precision · Pseudo-Hallucination · Cognitive Remediation · V1 Connectivity · Default Mode and Salience Networks · Anterior Cingulate · Neurological Qabalah · Catharturgy

I. The Problem: Source-Monitoring Degradation and Layer Merger

The ventromedial prefrontal cortex's source-monitoring function — the capacity to distinguish internally self-generated content from externally derived information — depends on the top-down predictive precision signals carried by layer-5 pyramidal neurons. These signals tag content as self-generated or externally derived before it reaches conscious processing. When they are intact, the distinction between internal and external is automatic and below the threshold of deliberate attention. When they are degraded — through cumulative serotonergic remodelling of the layer-5 architecture, through a neurodevelopmental substrate of reduced precision, or through other structural cause — the tagging fails. Internal content arrives without its self-generated marker, and the distinction between the inner world's content and the outer world's becomes progressively unreliable.

The phenomenology of this degradation is a slow merging of layers. The boundary between what is happening inside — in memory, in imagination, in consolidated fear content, in an error-detection loop — and what is happening outside becomes permeable, then thin, then dissolved. At the point of dissolution, internally generated content is experienced as externally derived. The feedback loop becomes self-sealing: fear generated by anticipation is not recognised as self-generated but read as external threat confirmation; the amygdala updates its threat assessment upward; the loop intensifies. This is the general structure of the self-amplifying fear loop that accompanies severe source-monitoring failure, and it is the most clinically consequential feature of the condition.

The Source Monitoring Framework identifies the specific mechanism of failure: source-monitoring errors arise because of similarities among the qualitative features of mental representations from various sources. Internal content — memories, imaginations, thoughts — and external content — perceptions, events, sensory data — are normally distinguished by specific qualitative features. External content carries higher perceptual detail, external spatial location, and sensory richness; internal content carries higher cognitive-operation markers, contextual embedding in self-referential narrative, and the felt sense of ownership. When the vmPFC's precision-tagging system is degraded, these features are not applied reliably, and internal content that is emotionally intense is misread as external because the tagging system's precision is insufficient to distinguish it from external perceptual data of equivalent intensity.

The problem is not that the internal world has become louder or the external world quieter. The problem is that the qualitative-feature distinction — the specific markers that tag content as belonging to one register rather than the other — has been degraded to the point where the two registers are no longer reliably differentiated. The merger is not perceptual. It is architectural. This precise diagnosis determines why the remediation must take the form it does, and why standard treatments do not reach it.

II. Why Standard Treatments Cannot Reach the Architecture

The structural character of the degradation determines why the standard interventions, pharmacological and psychological, fail to reach it. Each addresses a component of the presentation without touching the source-monitoring architecture itself.

Pharmacological treatment can be described at the level of mechanism class. Serotonergic reuptake inhibition can terminate or quiet an anxiety or obsessional loop, reducing the intensity of the interoceptive prediction-error signal; dopaminergic and noradrenergic agents can address the executive and motivational deficits that frequently co-occur; but none of these acts on the layer-5 precision architecture whose degradation produces the source-monitoring failure. This is not a pharmacological shortfall to be corrected by a better agent. It is a mechanistic boundary. The structural degradation is neuroplastic — a stable new configuration of the precision architecture, not a receptor-level dysfunction that pharmacology can modulate. Antipsychotic dopamine-D2 and serotonin-5-HT_{2A} antagonism is particularly instructive here: D2 blockade suppresses function across an already-taxed dopaminergic system while 5-HT_{2A} blockade cannot reverse accumulated neuroplastic change, so that the characteristic outcome is a general dimming of experience while the source-monitoring symptom itself persists — the pharmacological proof that the symptom is structural rather than receptor-level.

Psychological treatments fail at this specific level for a different reason: they presuppose the function they are meant to develop. Exposure and response prevention requires intact source-monitoring to identify obsessional content as self-generated. Cognitive restructuring requires the ability to tag a thought as one's own before it can be evaluated as rational or irrational. Standard mindfulness requires the ability to observe the arising of mental content from a position of metacognitive distance, which itself requires a functioning internal-external boundary as the ground of the observing position. Each of these approaches presupposes the source-monitoring capacity that the condition has compromised. What can rebuild the function — or, more precisely, build a deliberate functional substitute for it — must be neuroplastic: the sustained, deliberate activation of an alternative pathway that can perform the qualitative-feature discrimination the automatic system no longer reliably performs.

III. The Path Architecture: Two Routes, Two Registers

The Neurological Qabalah's path architecture identifies two distinct routes through which content reaches the analytical-categorisation endpoint of the left posterior cortex. The two routes pass through different intermediate relay structures and therefore deliver content carrying different qualitative features at the endpoint. The remediation is the deliberate, alternating, sustained exercise of these two routes, and its rationale rests entirely on the fact that the two routes are neurologically distinct at their relays.

III.1 The External Path

The external path runs from the right posterior cortex's broad contextual social-spatial reception, through the somatic and visual interface with the external world, to the left posterior cortex's verbal-analytical categorisation. Its defining relay is the somatic-external interface: primarily the visual gateway at the occipital pole, but also the primary somatosensory and auditory cortices. Opening the eyes is the primary activation of this relay — it switches the primary visual cortex's functional connectivity to the salience network and the external-world state. External content arrives feedforward through V1's middle cortical layer from the lateral geniculate nucleus, with the thalamic relay nuclei gating visual, auditory, and somatosensory input. The qualitative features of content arriving at the categorisation endpoint by this route are high perceptual detail, external spatial location, and the sensory richness of the physical world. Its source label is: this came from out there.

III.2 The Internal Path

The internal path runs from the same broad contextual reception, through the subcortical limbic baseline — hippocampus, amygdala, thalamus, the motivational midbrain, the serotonergic raphe, with the posterior cingulate and default mode network as their cortical expression — to the same verbal-analytical categorisation endpoint. Closing the eyes is the primary activation of this relay — it switches the same primary visual cortex's connectivity to the default mode network and the internal-world state. The same foveal centre at the occipital pole remains the central axis; what changes is the direction of flow through it, internally generated imagery arriving as feedback through V1's superficial and deep layers from the default network's reconstruction system rather than through the middle layer's feedforward input. The qualitative features arriving at the endpoint by this route are interoceptive detail, internal spatial location, the felt sense of the body's own state, and the limbic system's emotional-memory charge. Its source label is: this came from in here.

III.3 The Distinction Is Physically Present

The two paths are neurologically distinct at their relay points, and the distinction is physically present in the pathway outputs whether or not the automatic tagging system reads it. The external relay is the entire somatic interface with the external world; the internal relay is the subcortical limbic baseline with its cortical expression in the posterior cingulate and default network. The two are marked by different primary-visual-cortex connectivity states (salience network with eyes open, default network with eyes closed), different cortical layers carrying the content (middle-layer feedforward for external, superficial and deep feedback for internal), and different somatic qualities (exteroceptive sensory richness versus interoceptive ground). When the vmPFC's automatic tagging is intact, the qualitative difference between the two routes' outputs is registered automatically. When it is degraded, the tagging fails — but the qualitative difference remains physically present in the outputs. The source-monitoring failure is therefore not a failure of the

paths themselves but a failure of the tagging system that reads their qualitative output. This is precisely what makes deliberate remediation possible: the distinguishing information is still there to be used, and the practice trains the system to use it deliberately, reinforcing through repeated conscious exercise the discrimination the degraded automatic filter can no longer apply.

The two paths were always producing qualitatively distinct content. The source-monitoring failure was not a failure of the paths but of the system that reads their output and applies the internal-external distinction. Because the distinguishing features remain physically present in the pathway outputs, a deliberate discrimination can be trained to substitute for the automatic tagging that has failed.

IV. The Practice

IV.1 Preparation

The practice requires that the practitioner be able to locate, by directed attention, the somatic positions corresponding to the relays — the external-somatic boundary at and below the feet, the interoceptive centre at the lower abdomen, and the left and right posterior positions — and that the alternation between the external and internal anchors be available as a deliberate perceptual operation. Where a preliminary practice of alternating the external and internal focal grounds has been developed, it serves as the immediate prerequisite; the present practice extends that alternation through the complete circuit from the shared contextual reception, through the chosen anchor, to the categorisation endpoint, adding the deliberate source-labelling step.

IV.2 The Sequence

Stand with the spine upright and relaxed. The practice alternates between the two paths in a sustained, deliberate sequence; the minimum useful session is about ten minutes, and the neuroplastic benefit accumulates across repeated sessions over weeks and months rather than within any single session. The sequence is as follows. First, orient to the shared contextual reception: soften the visual field to broad ambient awareness, allowing the right posterior cortex's broad reception to open without directing attention anywhere specifically, for several breath cycles — the shared starting point of both paths before they split. Second, the external path: open the eyes, allowing the visual field to receive the external world without narrowing to a specific object, and simultaneously ground attention at the feet, the proprioceptive anchor of the somatic boundary with the physical world. Third, categorise at the endpoint: with attention grounded externally, allow a single clear verbal categorisation to arise — this is external; its source is the boundary between body and environment — deliberately applying the external-source label to content that has arrived by the external relay. Fourth, reset: return to broad ambient reception, neither external nor internal, for two or three breath cycles. Fifth, the internal path: close the eyes, bring attention to the interoceptive centre at the lower abdomen, and notice the interoceptive quality — the warmth, the subtle movement with the breath, the felt sense of the body's animating

ground, with the limbic system's emotional-memory charge as the content this route contributes. Sixth, categorise at the endpoint: with attention grounded internally, allow the single clear categorisation — this is internal; its source is the body's own baseline state — deliberately applying the internal-source label. Seventh, alternate: return to the shared reception, then repeat the external and internal passes in turn, with a reset between each, for the session's duration. A productive session runs from roughly five to fifteen complete alternations.

IV.3 The Mechanism of Remediation

The practice's remediating effect operates through three converging mechanisms. The first is qualitative-feature reinforcement: each alternation exposes the categorisation endpoint to the distinct qualitative features of externally grounded and internally grounded content in direct sequence, so that the exteroceptive features are experienced and labelled immediately before or after the interoceptive features. The contrast is direct and repeated, and the feature distinction the degraded automatic system no longer reliably applied is explicitly trained through the contrast of alternating experience. The second is pathway-specific neuroplastic development: sustained deliberate attention directed through a specific neural pathway activates and strengthens that pathway's functional connectivity through Hebbian mechanisms, so that repeating each route in alternation builds the distinctness of the two routes as a stable, reinforced feature of the system. The third is anterior-cingulate metacognitive substitution: the deliberate categorisation at the endpoint engages the anterior cingulate's evaluative function in exactly the source-attribution operation that the vmPFC's automatic tagging once performed, and repeated deliberate engagement builds the cingulate's capacity for deliberate source attribution to the point where it can function as a reliable substitute.

The practice does not restore the vmPFC's automatic source-monitoring system. It builds a deliberate functional substitute — the anterior cingulate's conscious source attribution, trained through repeated alternating pathway exercise, developing sufficient neuroplastic stability to function reliably in ordinary experience. The distinction between externally grounded and internally grounded content, once tagged automatically and below attention, is rebuilt as a deliberate discrimination that can be applied consciously and, with sufficient training, increasingly automatically.

V. Integration with a Wider Remediation Context

The practice is foundational among cognitive-remediation approaches to this condition because it addresses the specific architectural failure that makes other work more difficult. It should be established before metacognitive observation practices are applied intensively, because those practices depend on the internal-external boundary that this practice rebuilds: the capacity to observe the arising of mental content presupposes the source attribution that the practice trains. Once the practice has developed sufficient stability — when the practitioner can reliably experience the qualitative difference between externally grounded and internally grounded content in the alternating sequence — observation and evaluation of the content arising in each

register become possible on a secure footing.

The relation to pharmacological support is best stated at the level of mechanism class, since the two address different levels of the same problem and are mutually supporting rather than alternative. Reduction of an anxiety or obsessional loop quiets the interoceptive prediction-error signal, so that the content arriving by the internal route during practice is less dominated by fear and its interoceptive qualitative features are easier to discriminate cleanly. Support for prefrontal executive function supplies the working-memory resources the deliberate categorisation requires, since holding the source-attribution operation while the content is experienced is itself an executive demand. Support for sustained attention supplies the attentional substrate the practice requires across its several minutes of alternating directed attention. In each case the pharmacology reduces the load on the degraded system and clears the field; the practice builds the functional substitute. Neither is sufficient alone, and described this way the relation is general rather than tied to any particular agent or regimen.

VI. The Rationale for Efficacy

The plausibility of the practice rests on the cognitive-remediation literature, within which a deliberate, repeated training of a compensatory cognitive operation is a recognised route to durable functional change. Cognitive-remediation effects on source-monitoring and related functions in schizophrenia-spectrum presentations are documented as durable for months after the interventions are withdrawn, particularly in the executive-function and verbal-memory domains, and the mechanism of that durability is consistent with the present proposal: a deliberately trained compensatory operation, sufficiently practised, acquires neuroplastic stability and persists. The present practice is a specific instance of this general finding, targeted precisely at the source-attribution operation and built on the physically real distinction between the two pathways' outputs.

Two features of the practice give it a particular claim to efficacy within this literature. The first is that it does not attempt to repair the damaged automatic system but to build a substitute in an intact system — the anterior cingulate's deliberate evaluative capacity — which avoids the mechanistic boundary that defeats pharmacology. The second is that the discrimination it trains is grounded in a physically real and reproducible distinction: the eyes-open and eyes-closed switching of primary-visual-cortex connectivity between the salience and default networks is not a metaphor but a measured functional-connectivity state, and the same is true of the cortical-layer and somatic differences between the two routes. The practice trains a discrimination that corresponds to a real difference in the underlying signals, which is the condition under which a trained discrimination can become reliable. The boundary between the external and internal anchors is therefore not a symbolic construction but the specific functional state of the visual cortex and its associated relays, and the practice's effect is the progressive, neuroplastic consolidation of a deliberate discrimination built upon that real difference.

The practice does not repair the damaged automatic system; it builds a deliberate substitute in an intact one, and it trains a discrimination grounded in a physically real difference — the measured

switching of visual-cortex connectivity between the external and internal states. A trained discrimination becomes reliable precisely when it tracks a real difference in the underlying signals, and this one does.

VII. Conclusion

Source-monitoring degradation is an architectural rather than a receptor-level failure: the layer-5 precision system that automatically tags content as internally or externally sourced is structurally compromised, and the qualitative-feature distinction it once applied below the threshold of attention is no longer reliably applied. Pharmacology cannot reach this architecture, and standard psychological treatments presuppose the function they aim to restore. The remediation derived from the path architecture of the Neurological Qabalah builds a deliberate functional substitute: by exercising in sustained alternation the two physically distinct routes through which content reaches analytical categorisation — the external route grounded in the somatic-visual interface with the world, the internal route grounded in the limbic baseline — and by applying a deliberate source-label at the categorisation endpoint, the practice trains the anterior cingulate to perform consciously the source attribution the vmPFC once performed automatically. Because the distinction it trains tracks a physically real difference in the pathways' outputs, and because the cognitive-remediation literature establishes that such deliberately trained compensatory operations acquire durable neuroplastic stability, the practice has a coherent and grounded claim to efficacy. It is a precise instance of a general principle: where an automatic discrimination has failed, a deliberate one can be built to replace it, provided the difference it tracks is real.

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A note on scope. This paper describes a cognitive-remediation practice and its mechanistic rationale; it is not a clinical protocol, and source-monitoring disturbances of the kind described here warrant the involvement of a qualified clinician. The practice is presented as a complement to appropriate professional care, not as a replacement for it.

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