

Psychonautic Benchmarking: Towards Standardized Expertise Criteria in Non-Ordinary States Research

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Abstract

This paper addresses a methodological disparity between meditation research and research involving psychoactive substances. Studies of meditation routinely apply established criteria to distinguish expert practitioners from novices, while research with psychoactive substances screens for safety rather than classifying expertise. We analyze current benchmarking practice in meditation research, examine the limitations of participant selection in psychoactive substance research, and propose a multidimensional framework for psychonaut benchmarking that integrates quantitative exposure metrics, functional capacity assessment, phenomenological sophistication, typological profiling, and standardized competency evaluation. Drawing on parallels between the two domains, and incorporating a new competency instrument, the General Psychonautic Competence Assessment (GPCA), together with a proposed typological profiling component, the Psychonaut Profile Identification Assessment (PPIA), we aim to improve participant classification in research on non-ordinary states of consciousness. Both instruments are presented as proposals for collaborative development. Neither has completed psychometric validation, and the paper specifies the validation program each requires.

Keywords: psychoactive, psychedelics, meditation, expertise, altered states, consciousness research, psychonaut, benchmarking, competency assessment, typological classification, non-ordinary states

Introduction

Research into non-ordinary states of consciousness has expanded substantially in recent decades, with both meditation and psychoactive substances emerging as important avenues for understanding human consciousness (Carhart-Harris, 2018, 2026; Girn et al., 2026; Hinkle et al., 2024; Johnson et al., 2019; Stoliker et al., 2026; Vargas-Perez & Doblin, 2013; Yaden et al., 2021). The methodological approaches to subject selection in these fields, however, differ sharply. This paper examines that disparity and proposes a standardized approach to identifying expertise in non-ordinary states that parallels established practice in meditation research while addressing the multidimensional nature of psychonautic competence.

The scientific investigation of meditation has benefited from clear delineations between novice and expert practitioners, which allow researchers to study the cognitive, neural, and physiological correlates of meditative expertise (Thomas and Cohen, 2014). Research with psychoactive substances typically employs screening criteria focused on safety and harm reduction, without systematically accounting for participants' experience with various substances or states. This gap is consequential given evidence that experience level may modulate phenomenological content, cognitive function, affective regulation, and integration outcomes, none of which current screening practice captures.

Given the growth of research into psychoactive substances for therapeutic and consciousness-science applications, there is a need for more sophisticated methods of classifying participants by experience. Such methods would enable more nuanced investigation of effects that may be obscured in studies that ignore participant expertise. The recognition that psychonautic practice spans diverse orientations, from scientific to therapeutic to religious, further suggests that motivational profile may operate as a moderating variable in research outcomes.

Expert Criteria in Meditation Research

Meditation research has established robust criteria for defining expert meditators, enabling meaningful comparison between experts and novices. These criteria combine quantitative measures of practice time, qualitative features of training, and institutional validation.

Quantitative Criteria

The literature consistently establishes minimum thresholds through total practice hours, with many studies defining expertise as a minimum of 10,000 hours of formal practice and some examining practitioners with up to 50,000 hours (Lutz et al., 2004, 2008, 2015). Daily practice requirements figure prominently, with studies specifying minimum durations of 30 minutes or more per day sustained over years (Kaliman et al., 2014). Practice consistency is also emphasized, with expertise definitions often requiring sustained practice over 10 years or more

(Chételat et al., 2017). Kaliman et al. (2014), for example, studied practitioners with a mean of approximately 6,240 lifetime hours of practice, ranging from 1,440 to 14,730 hours.

Qualitative Aspects of Training

Beyond raw hours, studies frequently specify tradition-specific training, with experts typically trained in established traditions such as Tibetan Buddhism, Theravada Buddhism, or Zen (Lutz et al., 2008; Chételat et al., 2017). Retreat experience figures prominently, with many studies requiring a significant portion of practice hours to have been accumulated in intensive retreat; Kaliman et al. (2014) required a minimum of three intensive retreats of five or more days. Institutional validation is common, with expert meditators recruited through established centers, monasteries, or recognized teaching authorities (Lutz et al., 2004, 2008).

Practice Subtypes and Comprehensive Expertise

Research increasingly acknowledges the variety of meditative practices, distinguishing focused attention, open monitoring, and loving-kindness practices and treating them as phenomenologically and neurocognitively distinct (Lutz et al., 2015). Supervised training under qualified teachers is a further common criterion (Chételat et al., 2017). This systematic approach has made possible investigation of the neurological, cognitive, and emotional correlates of long-term practice that would not otherwise be available.

Participant Selection in Psychoactive Substance Research

In contrast, studies involving psychoactive substances typically employ selection criteria focused on safety rather than experience.

Safety-Oriented Screening

Protocols predominantly screen on mental health criteria, excluding participants with personal or family history of psychotic disorders, bipolar disorder, and other conditions that may increase risk of adverse reaction (Johnson et al., 2008; Studerus et al., 2010). Medical contraindications are assessed, including cardiovascular conditions and pregnancy (Carhart-Harris et al., 2016). Medication interactions are evaluated, with exclusion for medications that may interact adversely, particularly serotonergic agents (Johnson et al., 2008).

Limited Consideration of Prior Experience

Where prior experience is considered, it is typically addressed through binary classification, with participants labeled experienced or naive on the basis of whether they have ever used a given substance, without gradation (Griffiths et al., 2006). Participants reporting difficult prior experiences are frequently excluded, which may introduce selection bias (Carbonaro et al., 2016). Unlike meditation studies, studies with psychoactive substances rarely quantify the extent

of prior experience in terms of number of sessions, substances used, or contexts of use (MacLean et al., 2011).

Limitations of Current Approaches

Several limitations follow. Studies often include participants of widely varying experience, which may obscure effects more pronounced at one end of that range. The absence of standard exposure metrics makes cross-study comparison difficult. Current approaches do not capture the multidimensional character of expertise in navigating non-ordinary states, including familiarity with particular states, navigational skill within them, integration capacity, and the motivational orientations that shape how individuals approach and interpret their experiences. Screening also neglects the functional capacities, including cognitive preservation, affective regulation, somatic awareness, and ontological resilience, that distinguish experienced practitioners and influence both the safety and the phenomenological depth of these experiences.

Towards Psychonaut Benchmarks

Drawing on established practice in meditation research and addressing the limitations above, we propose a framework for psychonaut benchmarking that supports multidimensional classification of participants. The framework integrates exposure, function, and domain knowledge into the General Psychonautic Competence Assessment (GPCA), with typological profiling handled by a complementary component.

Rationale

Several parallels justify an approach modeled on meditation research. Both meditation and psychoactive substances reliably induce non-ordinary states with overlapping phenomenological features (Millière et al., 2018). Both involve developing skill in entering, navigating, and integrating those states (Nour et al., 2017). Both can produce challenging experiences, particularly in individuals with certain vulnerabilities (Lindahl et al., 2017; Carbonaro et al., 2016). Both show promise for mental health conditions, potentially through related mechanisms (Barrett & Griffiths, 2018). In both domains, practitioner expertise spans quantitative exposure, functional capacity, phenomenological sophistication, and contextual knowledge, and these interact in ways that a single metric cannot represent.

Exposure Categories

A first dimension of psychonautic experience is exposure across compound classes and practice modalities. Following expert consultation (Moore, personal communication, February 22, 2025) and in alignment with the exposure items of the GPCA, we group exposure by compound class rather than by individual substance: (1) psychedelics (e.g., psilocybin, LSD, mescaline, 2C-B), (2) dissociatives (e.g., ketamine, DXM, O-PCE), (3) stimulants (e.g., amphetamines, cocaine),

(4) depressants (e.g., alcohol, barbiturates, opioids), (5) deliriants (e.g., scopolamine, atropine, diphenhydramine), and (6) solvents and gases (e.g., nitrous oxide, xenon, ether). Non-pharmacological modalities, including meditation, breathwork, sensory deprivation, fasting, sleep deprivation, and rhythmic and movement practices, are assessed as a separate axis of exposure rather than as a seventh compound class, on the reasoning that competence in non-pharmacological modalities contributes to safety and experience quality across all compound classes.

Exposure Levels

The framework incorporates a graded exposure classification. We designate these Exposure Levels rather than tiers, to avoid confusion with the tier structure of the GPCA described below. Exposure Level 0 represents the general public with minimal or no intentional experience of non-ordinary states. Exposure Level 1 indicates basic experience, assessed through direct and indirect inquiry into the nature, frequency, and context of prior encounters. Exposure Level 2 reflects intermediate experience, verified through comprehensive evaluation and documented participation in supervised or structured settings. Exposure Level 3 denotes advanced experience, demonstrated through rigorous assessment, specialized training, and evidence of competency in navigating and potentially facilitating non-ordinary states for others. Gating conditions between levels incorporate within-category exposure, so that progression reflects depth rather than superficial breadth.

Assessment Methodologies

The framework combines direct inquiry, indirect observation, and practical engagement. Direct inquiry uses structured interviews examining specific experiences, doses, settings, and outcomes across categories. Indirect observation assesses spontaneous demonstration of knowledge, including unprompted reference to specific compounds, granularity in describing pharmacological responses, and understanding of interactions, all of which emerge naturally in conversation and provide evidence of lived expertise that self-report alone may not capture. Practical engagement evaluates competency in navigation, integration, and harm reduction under relevant conditions, on the principle that expertise is most accurately assessed through performance.

Typological Profiling: The PPIA

A further contribution of this framework is the recognition that psychonautic practitioners are not a homogeneous population differing only in experience level. The Psychonaut Profile Identification Assessment (PPIA) addresses a dimension absent from existing research

classification: the motivational and interpretive orientation that shapes how individuals approach, experience, and integrate non-ordinary states.

Rationale

Existing research designs implicitly assume that participants experienced with non-ordinary states approach them with broadly similar orientations. Clinical observation and ethnographic evidence suggest substantial variation in how practitioners conceptualize the purpose of their engagement, interpret phenomenological content, and integrate experiences. A participant who approaches psilocybin as a cognitive optimization tool is likely to engage with the same pharmacological intervention differently from one who approaches it as a sacrament or as an instrument of phenomenological research. These differences may modulate expectancy effects, shape set and setting, influence integration strategy, and affect measured outcomes in ways current methods cannot detect.

Profile Categories

The PPIA identifies ten orientations, each characterized by a primary motivation, preferred methodology, interpretive worldview, community identification, and ethical emphasis. The scientific orientation approaches non-ordinary states as empirical phenomenology, prioritizing documentation, controlled variables, and dose-response mapping. The therapeutic orientation engages with these states for psychological healing and growth, drawing on depth psychology and trauma-informed frameworks. The spiritual and existential orientation seeks transcendent experience, meaning, and philosophical inquiry into questions of being. The indigenous and traditional orientation participates in lineage-authorized ceremony within a specific cultural tradition, approaching plant medicines as sentient teachers within an animistic cosmovision. The religious orientation practices within an established tradition that uses psychoactive sacraments, such as Santo Daime, the União do Vegetal, or the Native American Church. The biohacker orientation focuses on cognitive performance, creativity, and problem solving, often through microdosing and quantified self-tracking. The neo-shamanic orientation facilitates transformation through ceremonial practice drawing eclectically on multiple traditions. The recreational and social orientation engages primarily for connection, celebration, and aesthetic enrichment within harm reduction norms. The research and clinical orientation engages within structured protocols as participant or volunteer. The harm reduction orientation reflects professional or volunteer work in harm reduction settings, including festivals, peer support, and drug-checking services.

These categories are not mutually exclusive. Practitioners commonly combine two or more, and the instrument is designed to yield a weighted distribution rather than a single label.

Current Operational Form and Development Status

We report the development status of the PPIA precisely, since the framework proposed here asks the field to raise its measurement standards. In its current operational form, the PPIA is implemented as an unscored profiling section administered alongside the GPCA, in which respondents select all orientations that apply and assign each a weight reflecting how central it is to their practice. This section is used for sample characterization and does not contribute to competency scores. A fuller instrument, in which orientation is inferred from responses across motivation, methodology, interpretive framework, knowledge sources, community, integration, ethics, challenging experiences, and future orientation, is under development. That instrument has not been built, administered, or validated, and no scoring thresholds or profile cutoffs should be inferred from this paper. The ten-profile structure derives from clinical observation, ethnographic literature, and expert consultation rather than from empirical clustering, and requires confirmation through latent profile or cluster analysis in an adequately powered sample.

Developmental Trajectories

Orientation is not fixed. Clinical observation suggests recurrent trajectories: recreational engagement deepening into therapeutic focus and later into spiritual orientation; scientific approaches expanding through philosophical questioning; clinical participation catalyzing independent practice; neo-shamanic practitioners seeking cultural authorization through traditional training. These patterns are hypotheses rather than findings. If they hold, typological profiling should be repeated at intervals in longitudinal designs, since shifts in orientation may accompany or predict changes in measured outcomes.

Research Applications

Integration of typological data into research design offers several potential advantages. Stratification by orientation would enable investigation of whether such differences moderate treatment outcome, phenomenological content, or integration efficacy. Cross-profile comparison would clarify how motivational frameworks shape the experiential and therapeutic dimensions of identical pharmacological interventions. Treatment matching on orientation may improve outcomes by aligning intervention design with participant expectation. Analysis of mixed profiles would illuminate the dynamics that arise when practitioners hold several orientations at once. Each of these applications depends on prior validation of the instrument.

Competency Assessment: The GPCA

The General Psychonautic Competence Assessment (GPCA; Estevez Rafael et al., 2026) provides the most granular layer of the framework, evaluating competencies across fourteen dimensions relevant to safe and effective navigation of non-ordinary states. Where typological

profiling captures orientation, the GPCA measures functional capacity, knowledge, and practical skill.

Instrument Architecture

The GPCA comprises 98 items across 14 dimensions, organized into three concentric competency tiers and three meta-tracks, and preceded by an unscored demographic section. Each item uses a behaviorally anchored response format with five options (A through E), where A represents minimal capacity, scored 1, and E represents exemplary practitioner-level mastery, scored 5, yielding a total score range of 98 to 490. Items appear in four stem formats, attribute-state, situational, frequency and behavioral, and self-positioning, to vary cognitive demand across the assessment. Each tier can be administered and scored independently, so that a study or program requiring only exposure screening can administer Tier 1 alone.

Tier 1: Experience

Tier 1 covers three dimensions and 17 items, with a score range of 17 to 85, and is the layer required for any participant. Amount of Experience assesses breadth and depth of direct exposure: number of state types, total number of experiences, compound classes, non-pharmacological modalities, and frequency of engagement. Harm Reduction and Safety Knowledge assesses contraindication knowledge, drug interaction literacy, recognition of escalation toward crisis, substance verification practice, and understanding of dosing and titration. Emergency Recognition and Response assesses the capacity to distinguish a difficult but productive experience from a genuine emergency, de-escalation repertoire, judgment about when professional intervention is required, composure under crisis, first aid knowledge specific to these contexts, and lived crisis management experience.

Tier 2: Function

Tier 2 covers seven dimensions and 46 items, with a score range of 46 to 230, and assesses how well a practitioner maintains and develops capacity across experiences. Methodological Rigor examines translation of insight into behavior, contemplative practice between experiences, intention setting, documentation, cross-experience pattern recognition, and preparation of set and setting. Somatic and Emotional Regulation examines responses to intense fear, relationship to self dissolution, emotional granularity, tolerance for difficult emotion, deployment of regulatory strategies, capacity to hold contradictory emotional states, interoceptive awareness, and understanding of purge processes. Ethical Integrity and Community Responsibility examines consent practice, awareness of power dynamics, contribution to harm reduction, accountability after harm, respect for the autonomy of others, and transparency about one's own difficult experiences. Cognitive Function examines attentional control, memory access, decision making, reality testing, temporal perspective, and communication during high-intensity states. Expertise

in Phenomenology examines descriptive precision, application of cartographic frameworks, symbolic and archetypal literacy, understanding of how set and setting shape content, discernment between state-bound impressions and durable insight, and understanding of the limits of language. Trauma-Informed Practice examines understanding of how trauma history shapes these experiences, recognition of activation, titration capacity, recognition of somatic trauma signs, stabilization repertoire, application of the window of tolerance, and follow-up care. Relational and Group Dynamics examines empathic attunement, awareness of transference and countertransference, non-directive presence, boundary maintenance, calibration of intervention, and rupture repair.

Tier 3: Knowledge

Tier 3 covers four dimensions and 35 items, with a score range of 35 to 175, and is the layer relevant to facilitator training and professional standing. Scientific and Research Literacy examines receptor pharmacology, knowledge of the default mode network and its role in self-referential processing, neuroplasticity, pharmacokinetic reasoning, familiarity with outcome evidence, critical evaluation of claims, research design comprehension, awareness of the field's methodological limitations, research currency, and translation of research into practice. Theoretical, Cultural, and Philosophical Literacy examines familiarity with major frameworks, historical knowledge, engagement with contemplative traditions, multi-framework interpretation, understanding of indigenous and traditional contexts, evaluation of practitioner legitimacy and appropriation dynamics, paradigm flexibility, cross-community engagement, and awareness of one's own cultural conditioning. Self-Study and Measurement Literacy examines familiarity with validated instruments such as the MEQ-30, the 5D-ASC, the CEQ, and the EDI, pre-session screening capacity, systematic self-assessment, comprehension of reliability and validity, outcome tracking, pattern extraction from accumulated data, developmental self-monitoring, and identification of learning edges. Professional and Legal Literacy examines legal framework knowledge, professional ethics including the ethics of intimate relationships between facilitators and participants, confidentiality practice, scope of competence and referral, ongoing professional development, and supervision engagement.

Meta-Track Scoring

The GPCA produces scores across three meta-tracks in addition to dimensional, tier, and total scores. The Experience Index, comprising 21 items with a range of 21 to 105, measures direct experiential depth and embodied navigational capacity. The Competency Index, comprising 47 items with a range of 47 to 235, measures knowledge, methodology, and self-directed practice sophistication. The Care and Facilitation Index, comprising 30 items with a range of 30 to 150, measures capacity to hold space for, support, and professionally serve others. Items are assigned to meta-tracks at item level rather than by dimension, so a single dimension may contribute to

more than one index. Trauma-Informed Practice, for example, contributes items to both the Experience Index, where the respondent is the subject, and the Care and Facilitation Index, where another person is.

Score Interpretation

Normative interpretation bands have not yet been established, and we decline to publish provisional ones. Bands developed for an earlier 120-item, six-point version of the instrument do not transfer to the current 98-item, five-point format. Tier and meta-track scores are therefore reported as continuous measures, with banding deferred until pilot data permit psychometric calibration against external criteria. Until that calibration exists, the instrument supports relative comparison and within-subject tracking but does not license categorical statements that a given individual is or is not competent to participate in a given setting.

Functional Capacity Dimensions

A distinctive feature of the framework is its emphasis on functional capacities that distinguish experienced practitioners and bear directly on safety and research outcomes. These extend beyond what quantity-of-exposure metrics capture and describe the operational competencies that develop through sustained, intentional engagement.

Cognitive Preservation

Maintenance of analytical thinking, memory formation, and executive function under varying dose levels is both a safety dimension and a marker of expertise. GPCA Dimension 7, Cognitive Function, assesses this across a range from complete loss of attentional control and working memory to preserved judgment and memory continuity during peak intensity. Cognitive preservation mitigates physical adverse outcomes, through maintained capacity for safety-relevant decision making, and reduces a source of confounding in phenomenological reporting.

Emotional Regulation and Equanimity

The capacity to maintain emotional stability during challenging experiences distinguishes experienced navigators from novices in ways that parallel meditation expertise criteria. GPCA Dimension 5, Somatic and Emotional Regulation, assesses this through behavioral anchors spanning complete panic, gradual development of equanimity, and the reception of difficult emotional states as informative signals that move through awareness without resistance or identification. The dimension includes the capacity to hold contradictory emotions simultaneously, such as grief alongside gratitude, which practitioners and clinicians alike associate with the most productive experiences, though this association has not been tested empirically.

Somatic Literacy and Physiological Regulation

Capacity to regulate bodily responses, manage physical discomfort, and maintain awareness of physiological state is a dimension of expertise largely absent from current classification practice. GPCA Dimension 5 evaluates interoceptive awareness during non-ordinary states, understanding and navigation of purge processes, and deployment of body-based regulatory strategies. Recognition of somatic trauma manifestations is assessed separately, in Dimension 9, Trauma-Informed Practice. Individual differences in body load tolerance and in the interaction between interoceptive awareness and salience systems represent important sources of variance that expertise classification should capture.

Ontological Resilience

Preservation of identity coherence and worldview stability despite profound alteration of consciousness is a dimension that current protocols neglect. It is reflected across several GPCA dimensions, including reality testing in Dimension 7 and the discernment and ineffability items in Dimension 8, Expertise in Phenomenology. It distinguishes practitioners who can engage with self dissolution, entity encounters, and ontological destabilization while retaining the meta-awareness necessary for productive engagement from those who are destabilized by such experiences.

Community Function and Boundary Maintenance

Maintenance of appropriate boundaries, ethical conduct, and regard for the welfare of others during and after these experiences is an expertise dimension with particular relevance for group research settings and therapeutic applications. GPCA Dimensions 6, 10, and 14, covering Ethical Integrity and Community Responsibility, Relational and Group Dynamics, and Professional and Legal Literacy, collectively assess this domain, ranging from basic awareness of consent and power dynamics to skilled navigation of complex relational dynamics and the capacity to address ethical violations within a community.

Individual Difference Factors

The framework recognizes individual variation that moderates the relationship between exposure and functional capacity.

Physiological Responsivity

Differences in metabolic processing, body load tolerance, and interoceptive sensitivity produce significant variation in how identical doses are experienced. These differences appear in the quality and intensity of somatic response, sensitivity to effects, and capacity for physiological

self-regulation. Assessment of baseline somatic awareness and body-based practice provides context for interpreting both self-reported and physiological measures.

Phenomenological Variation

Individuals differ substantially in agency, vividness, and complexity of internal experience across visual, auditory, haptic, and interoceptive domains, and these differences interact with substance effects in ways expertise classification should accommodate. GPCA Dimension 8 provides a structured approach through evaluation of descriptive vocabulary, cartographic mapping capacity, symbolic literacy, and understanding of the relationship between set, setting, and phenomenological content.

Interpretive Flexibility

Cognitive flexibility, openness to experience, and susceptibility to rigid belief formation carry implications for both research validity and participant safety. Indicators associated with adaptive engagement include playfulness, intellectual curiosity, self-deprecating humor, and flexible coping. Indicators that may warrant additional support include catastrophic interpretation, rigid attribution of special significance to experience content, and repetitive cognitive loops. We note explicitly that these indicators derive from clinical observation rather than from validated measurement, that they overlap with existing constructs in personality and psychopathology research, and that they should not be operationalized as screening criteria until that overlap has been examined empirically.

Harm Reduction Integration

The framework supports harm reduction protocols matched to demonstrated competency, moving beyond binary safe and unsafe screening toward graduated matching of support to participant profile.

Matching Support to Competency

Medical management of acute adverse reactions is the responsibility of qualified medical personnel operating under established institutional protocols, and we make no pharmacological recommendations here. What benchmarking contributes is the information needed to determine the level of monitoring, preparation, and on-site medical support that a given participant profile warrants, and to identify in advance which participants are likely to require more intensive support.

Guidance by Competency Level

Protocols for participants at low competency emphasize comprehensive preparation, close supervision, expectation management, and structured integration support. Intermediate protocols

allow greater autonomy while focusing on skill development and the introduction of more demanding navigational techniques. Advanced protocols emphasize minimal direct supervision, novel exploration, contribution to knowledge development, and mentorship. Demonstrated competence at any level does not remove the requirement for medical cover, and a low Tier 1 score should be treated as a contraindication to high-intensity settings regardless of how high the remaining tier scores are.

Implementation and Validation

Practical implementation requires systematic development and validation of both instruments, which we set out here as a commitment rather than an aspiration.

Instrument Development

Both instruments require establishment of psychometric properties including internal consistency, test-retest reliability, and construct validity. The PPIA requires validation of its proposed profile structure through latent profile or cluster analysis, followed by confirmatory analysis in an independent sample, and examination of convergent and discriminant validity against existing personality and motivation measures. The GPCA requires item analysis to confirm the performance of its behaviorally anchored scale, verification of its dimensional structure, and normative data across populations varying in exposure and orientation. Several item pairs within the GPCA are expected to correlate highly, including those covering intention setting and set and setting preparation, post-experience documentation and systematic self-assessment, and de-escalation and trauma stabilization technique. Pilot data should confirm whether these load on separate factors; where they do not, consolidation within the stronger dimension is indicated.

Experience Verification

Corroborating self-reported exposure presents distinctive challenges where the behavior in question is criminalized in most jurisdictions. The framework proposes a multi-method strategy combining indirect knowledge assessment, behavioral performance evaluation under controlled conditions, peer validation through practitioner networks, and examination of convergence between self-report and demonstrated competency. The graded exposure structure provides partial verification through gating conditions requiring demonstrated competency before progression.

Relationship to Existing Instruments

The GPCA is intended to complement rather than replace existing measures. Phenomenological outcome instruments such as the OAV and its derivatives (Studerus et al., 2010) measure the content of a given experience rather than the practitioner's standing capacity. The Psychedelic

Preparedness Scale (McAlpine et al., 2024) measures readiness for a specific forthcoming session across knowledge and expectation, intention and preparation, psychophysical readiness, and support planning, and overlaps substantially with the Tier 1 and Methodological Rigor content of the GPCA. Establishing convergent validity against the Psychedelic Preparedness Scale, and discriminant validity against measures of trait openness and general self-efficacy, is a priority for the validation program, and will also indicate whether the GPCA adds incremental predictive value over instruments already available.

Research Applications

Integration of benchmarking criteria into research design spans several domains. Study design would incorporate competency scores, typological profiles, and exposure levels into participant selection, stratification, and outcome analysis. Cross-study standardization through common metrics would enable comparison across research groups. Longitudinal tracking would permit systematic assessment of expertise development over time, with implications for understanding skill acquisition in non-ordinary states that parallel existing models in meditation research.

Potential Benefits

Research Methodology

Benchmarking could reduce unexplained variance through more homogeneous grouping. The capacity to investigate expertise-dependent effects may reveal dose-response relationships, phenomenological patterns, and therapeutic mechanisms currently obscured by participant heterogeneity. Standardized classification would also support cross-modal comparison between states induced by meditation and by psychoactive substances, enabling investigation of whether experienced meditators and experienced psychonauts develop comparable capacities by different routes.

Clinical and Therapeutic Applications

Matching on combined competency and orientation may improve outcomes by aligning intervention design with both capacity and expectation. Safety protocols informed by detailed competency assessment support better anticipation of difficulty. Experience-appropriate integration guidance addresses a gap in current practice, where identical recommendations are offered regardless of prior experience, phenomenological sophistication, or interpretive framework.

Theoretical Advances

Systematic classification would enable more precise investigation of how experience level influences non-ordinary states. Models of expertise development analogous to those in meditation research become possible once practitioners can be located on a developmental continuum. Combining typological and competency data would allow investigation of whether different orientations produce distinct developmental trajectories, phenomenological signatures, or outcomes.

Limitations

The framework and its instruments carry limitations that bear on how the proposals in this paper should be used.

Both instruments rely on self-report, which is subject to social desirability effects and, more seriously for a competency measure, to the well-documented tendency of the least competent to overestimate their capacity. This is a structural concern rather than a peripheral one: a self-rated competency scale is most likely to be inaccurate precisely where accuracy matters most for safety. Behavioral and observer-rated verification of self-reported competence is therefore a requirement of the validation program rather than an optional extension, and self-reported scores should not be used as a sole gating criterion for access to high-intensity settings.

Neither instrument has completed psychometric validation. Factor structure, reliability, and validity are asserted as design intentions rather than demonstrated properties, and no normative data exist. The dimensional structure of the GPCA has been revised repeatedly during development, with dimensions merged and items retired, which is appropriate at this stage but means that no version has yet accumulated a stable evidence base.

The typological structure derives from clinical observation, ethnographic literature, and expert consultation rather than from empirical clustering, and may not survive contact with data. The developmental trajectories described are hypotheses generated from practitioner report.

Instrument development has taken place in English, largely among Western and online practitioner communities. Both the competency dimensions and the profile categories encode assumptions about individual practice, documentation, and self-analysis that may not transfer to traditional or communal contexts, where competence may be located in a lineage or a community rather than in an individual. Cross-cultural validation, including examination of measurement invariance, is required before the instruments are applied outside the populations in which they were developed.

Legal constraints limit verification of self-reported exposure and are likely to bias participation toward those who feel safe disclosing. Finally, expertise thresholds proposed here are not yet evidence-based, and the relationship between competency scores and outcomes of practical

interest, including adverse event rates and integration success, remains an empirical question rather than an established finding.

Conclusion

The disparity between how expertise is conceptualized and measured in meditation research and in research with psychoactive substances represents an opportunity for methodological advance. Standardized psychonaut benchmarks that parallel the expertise criteria used in meditation research, while accommodating the multidimensional character of expertise in non-ordinary states, could improve both the precision and the safety of studies in this area.

The framework integrates three complementary approaches: exposure metrics organized by compound class and assessed through a graded classification, typological profiling that captures the orientations shaping practitioner engagement, and competency evaluation through the General Psychonautic Competence Assessment across fourteen dimensions of practice. Together these instruments address the full complexity of psychonautic expertise: how much experience a participant has, what kind of practitioner they are, what they can do, and how they approach the territory of non-ordinary states.

Future work should focus on validating these instruments in diverse populations, establishing evidence-based thresholds through empirical investigation, and integrating benchmarking data into research protocols across institutions. The interaction between orientation, competency level, and outcome is a particularly promising area that current methodology cannot address. Such advances would enhance scientific rigor and could contribute to safer and more effective applications of psychoactive substances in therapeutic, research, and personal development contexts.

The framework is a starting point for collaborative development rather than a finished solution. We invite continued dialogue among researchers, clinicians, and experienced practitioners to refine and implement these benchmarks.

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