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Can We Really Taxonomize the Nonordinary? Reflections on a Consensus Classification for Altered States of Consciousness

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Cardeña and colleagues (2025) have made an ambitious and much-needed contribution with their proposed consensus taxonomy of altered (nonordinary) states of consciousness (ASCs). Utilizing a modified Delphi methodology and drawing on broad multidisciplinary expertise, the authors developed a classification system grounded in clearly defined subjective experiences – phenomenological features. In its current version, the taxonomy comprises eight major phenomenological categories and associated subcategories, ranging from proto/transitional states to unity/mystical experiences. This classification brings order to a field long characterized by conceptual disarray.

A key advancement is the move away from induction-based or trigger-based classification (e.g., hypnosis, meditation, psychedelics as primary categories). Such approaches tend to obscure the heterogeneity of subjective experiences and overlook individual differences in predispositional traits. By anchoring the taxonomy in first-person phenomenology, the authors provide a firmer ground for systematic comparisons of ASCs across cultural traditions, techniques, and individuals.

Yet, while the proposed taxonomy is a welcome step forward, it also presents challenges that warrant further consideration. Most notably, the suggested categories appear to lack discreteness, despite the authors' explicit efforts to establish mutually exclusive and independent classes. For instance, the dissolution of personal identity may simultaneously align with multiple phenomenological categories in the taxonomy, including: (a) "No awareness of or disconnection from environmental stimuli, without ongoing subjective experience," (b) "Alteration in the usual sense of identity, often referred to as trance," and (c) "A sense of pure consciousness devoid of sensory input and self-referential awareness." Moreover, experiences such as detachment from the self ("experiential detachment") and expansive states resembling "boundaryless unity" frequently co-occur within the same altered state, regardless of the induction method – be it psychedelics (Costines & Schmidt, 2024), meditation (Fingelkurts et al., 2020), or hypnotic absorption (Fingelkurts & Fingelkurts, 2025). Even states of delirium may encompass elements of altered identity and fantastical imagery (Rasmussen, 2024). In practice, the same nonordinary state may exhibit features that span multiple categories, rendering them *transcategorical*.

Consequently, ASC phenomenology is often multidimensional and fluid (Fazekas & Overgaard, 2016), resisting strict compartmentalization. It appears, that any given ASC is characterized by a common – or at least largely overlapping – set of phenomenological dimensions with varying degrees in the expression of experiential features, depending on the functional significance of the prevailing phenomenological manifestations within a particular experience. Together, they form a *phenomenological configuration*, understood as the *superposition of relative proportions* of experiential features. From a *dimensional perspective*, each experiential feature can be expressed along a continuous spectrum, ranging from minimal to maximal intensity.

This perspective emphasizes the importance of evaluating ASCs not as discrete, categorical conditions, but as continuum of configurations and expressions, each associated with varying degrees of phenomenological feature manifestation. In this context, the non-discreteness of ASC should not be regarded as a methodological limitation of the original taxonomy; rather, it reflects the *inherent* fluidity and variability of nonordinary states of consciousness. Consistent with this observation is the recurring aspect of altered Selfhood across multiple taxonomies (Cardena et al., 2025). As Fingelkurts and colleagues (2022, p. 256) noted:

“[...] alterations in self dominate the phenomenological reports during ASCs: this is the case for dreams when one does not have a body, but rather is present “as an abstract, undefined volume of indeterminate extension or even as an unextended point in space” (Windt 2015; p. 15; see also Windt 2010; Metzinger 2013), as well as during dreamless sleep, when even a minimal form of phenomenal selfhood is lost (Thompson 2015; Windt 2015; Windt et al. 2016), or drug induced self dissolution (Lebedev et al. 2015; Wittmann 2015; Letheby and Gerrans 2017; Millie`re 2017; Nour and Carhart-Harris 2017; Deane 2020), or alterations of self features as well as selfless states during meditation (Mañjuśrīmitra, 1987; Travis and Pearson 2000; Shear 2007; Josipovic 2010; Berkovich-Ohana et al. 2013; Ataria et al. 2015; Metzinger 2020) and during sensory deprivation (Kjellgren et al. 2008, 2010; Glicksohn et al. 2019; Glicksohn and Ben-Soussan 2020), in hypnotic states (Crawford and Gruzelier 1992; Gruzelier 2000; Kallio and Revonsuo 2003), and during epileptic seizures (Johanson et al. 2008; Blumenfeld 2012)”.

Thus, while taxonomies such as the one proposed by Cardena et al (2025) are important for guiding further research, they may benefit from being conceptualized not as *rigid bins* but as intersecting *dimensions* or overlapping clusters, within which transcategorical phenomenological features manifest to varying degrees. Borrowing from psychometrics (Takane, 2006), one might even envision a multidimensional space in which specific ASC episodes are positioned according to varying weights across several phenomenological axes corresponding to different phenomenological features. Such a shift would preserve the clarity of the authors’ current categories while accommodating the lived experiential reality of hybrid and dynamic states.

For example, the *Phenomenal State-Space (PSS)* framework (Costines & Schmidt, 2024) offers a promising way to operationalize the multidimensionality of ASC (see also Fell, 2004; Werner, 2009; Bayne et al., 2016). Within this framework, ASCs are defined by their location in the PSS, determined by relative intensity across multiple PSS dimensions. An ASC can thus be understood as a point in this multidimensional space, with its evolution over time represented as a trajectory through the PSS. A central challenge (for both theoretical and empirical approaches) lies in identifying the specific features that constitute the dimensionality of the PSS. To address this, the collection of large-scale datasets is required, enabling efficient analysis of which fundamental dimensions of subjective experience best capture the full spectrum of ASC. Two complementary approaches may help define the axes of a continuous PSS: (a) *continuous phenomenological gradation* where continuous scores are derived and formal thresholds for “altered” zones (e.g., clustering boundaries or decision rules) without collapsing gradations into simple categories are considered, and (b) *factorial analyses of subjective experiences* to reveal latent dimensions that parsimoniously explain variance across techniques and populations.

Moreover, the specific configuration and expression of experiential features may carry distinct meanings depending on the broader context in which they arise – a phenomenon referred to as “*contextual functionality*” (Hellhammer, et al., 2018). For instance, the experience of bodily detachment and lack of “mineness” is highly disturbing and debilitating when it occurs spontaneously and without intention, as is typically the case in depersonalization disorder (Fingelkurts & Fingelkurts, 2022). Patients with this disorder feel anxious and fear losing self-control. By contrast, when the very same experience is intentionally cultivated and anticipated, such as during meditation (Fingelkurts et al.,

2020, 2022), it does not cause any distress and instead has positive effects on well-being (Ehmann et al., 2025). This highlights the importance of considering the broader context when evaluating ASC.

The authors also advocate for future integration with neurophenomenology, whereas first-person reports are systematically paired with neural measures (Cardeña et al., 2025). Here again, the issue of non-discreteness may prove illuminating rather than problematic: Overlapping experiential states may correspond to overlapping (or dynamically shifting) neural networks. For example, default mode network alterations have been linked to both altered identity and unity experiences (Fingelkurts et al., 2020), while thalamo-cortical dysregulation may underlie both delirium and visionary imagery (Esmaeeli et al., 2019; Onofrij et al., 2023). Thus, although the taxonomy offers a promising starting point, future neurophenomenological research will likely reveal its flexible and fluid boundaries that cut across heterogeneous categories.

The value of the neurophenomenological approach lies not just in the mechanistic integration of first-person and third-person perspectives, but rather in the recognition that the structure of the brain's electromagnetic field (as measured by qEEG operational architectonics) and the mind's phenomenological architecture are complementary aspects of the same unified metastable continuum (Fingelkurts et al., 2009). Within this continuum, neural and phenomenal domains are functionally isomorphic to each other through a nested hierarchy of spatiotemporal operations (Fingelkurts et al., 2010). In this framework, the nested hierarchy of phenomenal structures – ranging from features and patterns to objects and scenes – has an electrophysiological counterpart in the operational hierarchy of nested electromagnetic fields generated by neuronal assemblies. Together, they form what has been described as “metastable brain-mind agency” (Fingelkurts et al., 2009, p. 238).

Another merit of the paper is its acknowledgment of cultural and metaphysical diversity (Cardeña et al., 2025). Although the taxonomy adopts a Western view of consciousness as a state internal to the individual, other traditions may construe these experiences as access to subtler realities (Locke & Kelly, 1985; Winkelman, 2024). Engaging seriously with these alternative ontologies may not only enrich the taxonomy but also help avoid premature reductionism.

In conclusion, Cardeña et al. (2025) have succeeded in laying a conceptual foundation that may help consolidate ASC research across disciplines. Their taxonomy introduces structure without sacrificing complexity and opens the door to data-driven neurophenomenological inquiry. The central challenge ahead lies in embracing the very ambiguity that makes ASCs so compelling: They often refuse to sit comfortably in just one categorical “box”. Rather than a flaw, this may be the most revealing essence of consciousness itself.

References:

- Bayne, T., Hohwy, J., & Owen, A.M. (2016). Are there levels of consciousness? *Trends in Cognitive Sciences*, 20(6), 405–413. <https://doi.org/10.1016/j.tics.2016.03.009>
- Cardeña, E., Berkovich-Ohana, A., Valli, K., Barttfeld, P., Gomez-Marin, A., Greyson, B., Kumar, V. K., Laureys, S., Luhrmann, T. M., Newberg, A., Preller, K. H., Putnam, F. W., Tagliazucchi, E., Walsh, R., Carter, O., & Yaden, D. (2025). A consensus taxonomy of altered (nonordinary) states of consciousness: Bringing order to disarray. *Psychology of Consciousness: Theory, Research, and Practice*. Advance online publication. <https://dx.doi.org/10.1037/cns0000431>
- Costines, C., & Schmidt, T. T. (2024). Phenomenology of psychedelic experiences and psychedelic-associated distressing effects: Quantifying subjective experiences. In B. A. Ellenbroek, M. P. Paulus, J. Olivier, & K. H. Preller (Eds.), *Current Topics in Behavioral Neurosciences* (pp 1–23). Springer: Berlin, Heidelberg. https://doi.org/10.1007/7854_2024_562
- Ehmann, S., Pohlig, R. T., Chaoul, A., Cuzzupe, J., Vaughn, M., Rocco, G., Wangyal, T., & Gawrysiak, M. (2025). Bridging the soteriological-secular divide: A 9-month online Tibetan mind-body practice program enhances eudaimonic well-being and non-dual awareness. *Mindfulness*, 16, 3598–3611. <https://doi.org/10.1007/s12671-025-02704-7>

- Esmaeeli, S., Murphy, K., Swords, G. M., Ibrahim, B. A., Brown, J. W., & Llano, D. A. (2019). Visual hallucinations, thalamocortical physiology and Lewy body disease: A review. *Neuroscience & Biobehavioral Reviews*, 103, 337-351. <https://doi.org/10.1016/j.neubiorev.2019.06.006>
- Fazekas, P., & Overgaard, M. (2016). Multidimensional models of degrees and levels of consciousness. *Trends in Cognitive Sciences*, 20(10), 715-716. <https://doi.org/10.1016/j.tics.2016.06.011>
- Fell, J. (2004). Identifying neural correlates of consciousness: The state space approach. *Consciousness and Cognition*, 13(4), 709-729. <https://doi.org/10.1016/j.concog.2004.07.001>
- Fingelkurts, A. A., Fingelkurts, A. A., & Kallio-Tamminen, T. (2020). Selfhood triumvirate: From phenomenology to brain activity and back again. *Consciousness and Cognition*, 86, 103031. <https://doi.org/10.1016/j.concog.2020.103031>
- Fingelkurts, A. A., Fingelkurts, A. A., & Kallio-Tamminen, T. (2022). Self, Me and I in the repertoire of spontaneously occurring altered states of Selfhood: eight neurophenomenological case study reports. *Cognitive Neurodynamics*, 16(2), 255-282. <https://doi.org/10.1007/s11571-021-09719-5>
- Fingelkurts, A. A., Fingelkurts, A. A., & Neves, C. F. H. (2009). Phenomenological architecture of a mind and operational architectonics of the brain: The unified metastable continuum. *New Mathematics and Natural Computation*, 5(1), 221-244. <https://doi.org/10.1142/S1793005709001258>
- Fingelkurts, A. A., Fingelkurts, A. A., & Neves, C. F. H. (2010). Natural world physical, brain operational, and mind phenomenal space-time. *Physics of Life Reviews*, 7(2), 195-249. <https://doi.org/10.1016/j.plrev.2010.04.001>
- Fingelkurts, A. A., & Fingelkurts, A. A. (2022). Depersonalization puzzle: A new view from the neurophenomenological Selfhood perspective. *Journal of NeuroPhilosophy*, 1(2):181-202. <https://doi.org/10.5281/zenodo.7253994>
- Fingelkurts, A. A., & Fingelkurts, A. A. (2025). Echoes of the self: A neurophenomenological journey into the shifting realms of selfhood in neutral hypnosis. In D. Terhune, G. Jamieson, V. De Pascalis (Eds.), *International Review of Neurobiology. Hypnosis: Part A*. (vol. 184, pp. 1-27). Elsevier. <https://doi.org/10.1016/bs.irn.2025.06.001>
- Hellhammer, D., Meinschmidt, G., & Pruessner, J.C. (2018). Conceptual endophenotypes: A strategy to advance the impact of psychoneuroendocrinology in precision medicine. *Psychoneuroendocrinology*, 89, 147-160. <https://doi.org/10.1016/j.psyneuen.2017.12.009>
- Locke, R. G., & Kelly, E. F. (1985). A preliminary model for the cross-cultural analysis of altered states of consciousness. *Ethos*, 13(1), 3-55. <https://doi.org/10.1525/eth.1985.13.1.02a00010>
- Onofri, M., Russo, M., Delli Pizzi, S., De Gregorio, D., Inserra, A., Gobbi, G., & Sensi, S. L. (2023). The central role of the Thalamus in psychosis, lessons from neurodegenerative diseases and psychedelics. *Translational Psychiatry*, 13(1), 384. <https://doi.org/10.1038/s41398-023-02691-0>
- Takane, Y. (2006). 11 Applications of Multidimensional Scaling in Psychometrics. In C. R. Rao, & S. Sinharay (Eds.), *Handbook of Statistics* (vol. 26, pp. 359-400). Elsevier. [https://doi.org/10.1016/S0169-7161\(06\)26011-5](https://doi.org/10.1016/S0169-7161(06)26011-5)
- Rasmussen, A. R. (2024). Anomalies of imagination and development of psychosis: A phenomenological account. *Schizophrenia Research*, 264, 204-210. <https://doi.org/10.1016/j.schres.2023.12.024>
- Werner, G. (2009). Consciousness related neural events viewed as brain state space transitions. *Cognitive Neurodynamics*, 3(1), 83-95. <https://doi.org/10.1007/s11571-008-9040-6>
- Winkelman, M. J. (2024). Neurophenomenology and neuroepistemology approaches to integrating constructivist, perennialist, and universalist perspectives on mystical experiences. *Zygon: Journal of Religion and Science*, 59(2). <https://doi.org/10.16995/zygon.11589>