



Response to Letter to the Editors “Neurophenomenological Investigation of Mindfulness Meditation “Cessation” Experiences Using EEG Network Analysis in an Intensively Sampled Adept Meditator”

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We would like to acknowledge critiques by Dhammadinnā and Saron regarding the meditation practice of Daniel M. Ingram (DI), a co-author and the participant in a recently published study in *Brain Topography* (Van Lutterveld et al. 2024).

The research participant was selected based on the self-reported ability to attain cessations. This claim was based on the participant’s 26 years of meditation experience in a variety of meditative traditions (including an estimated over 6,000 h of time spent in meditation retreats) and authoring a book on advanced meditation (Ingram 2008/2018). In the study, the participant identified cessations and graded their phenomenological quality using a rating system similar to canonical descriptions of these events (Ñāṇamoli 2010). Obviously, research into first-person experiences relies on self-report, which is a long-standing issue in meditation research (Davidson and Kaszniak 2015). This is what, in part, makes neurophenomenological studies important, as linking first-person experiences to third-person neural data can establish neural grounding for experiences of interest. In our study, we observed an association between self-reports

of cessations and neural activity, that is, a gradual breakdown in functional connectivity preceding cessations, and a gradual recovery following cessations (please note that the timeframe during cessations was not investigated). Interestingly, this gradual breakdown in neural communication and its gradual recovery might be in line with the experience of cessations, which is a “breakdown”, or “cut” from consciousness.

The key criticism by Dhammadinnā and Saron is that DI’s subjective experience following cessations, as well as DI’s phenomenology related to the four stages of awakening, diverges from historical/Buddhist frameworks, casting doubt upon his ability to attain cessations. This criticism is in line with ongoing parallel scientific and sectarian, orthodox discussions regarding a previously published paper using the same data (Chowdhury et al. 2023, 2024).

In general, any case-study of advanced meditation, or any case-study in general, needs replication in a larger sample. Ideally, diverse meditation traditions will be included as well. This may reveal whether the neural correlates identified in the current study are specific to DI’s experiences or apply more broadly. The current report can be considered a first step in this direction. The reader of our article may also benefit from noting the following passage in the Limitations section of our article, we emphasized that “... such a protocol (i.e, a case study) simultaneously reduces the generalizability of the current results. Future studies with multiple participants of varying levels of meditation practice will allow for the examination of the broader validity of the current findings.” We hope that the current study’s results will inspire further research on cessations and other forms of advanced meditation, and that advanced meditation can be researched in large enough groups of participants to enable group-level statistics, allowing to interpret this study’s generalizability.

We understand that this neurophenomenological case study, and that this reply, do relatively little to address key

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concerns that Saron and Dhammadinnā mention, namely: the larger underlying complex controversies in contemporary Theravada exegesis, the soteriological and orthodox concerns and contexts of certain sects of the Theravada, and their arguments with those from other sects and traditions more broadly, the general issue of the apparent dearth of scientific research on the functional realities and psychological, physiological, and behavioral performance characteristics of those with “paths” (a key meditative endpoint in Theravada Buddhism), nor of the ambiguities of how various conceptions of cessations may apply to any other meditation traditions and their soteriological aims, nor was it intended to. Further we have not directly addressed the key epistemic issues of how to determine various possible attainments that do not rely on potentially imprecise social designations, nor tautological ambiguities in the definitions and assignments of “paths”.

Instead, it explores possible scientific, neurophenomenological criteria of potentially replicable events, to be explored, verified, performance tested, or contradicted by further investigation of other practitioners in additional peer-reviewed contexts, such as this one. We hope that future research will directly address the questions and issues listed above.

To that end, we invite Dhammadinnā, Saron, Anālayo, and others with similar concerns to contribute to this ongoing research on advanced meditation and to consider scientifically investigating the largely unaddressed topics they care about, such as the realities of “paths” in living practitioners within and outside of their particular sects, such that these perennial soteriological and phenomenological debates, which have split whole traditions within Buddhism for over two millennia, may potentially benefit from scientific inquiry.

Our ongoing work aims to advance the science of advanced meditation (Sacchet et al. 2024), and the present discussion further highlights the need for the replication of our results in meditation practitioners from various disciplines and traditions, including potentially other practitioners who are believed by Dr. Saron and Dr. Dhammadinnā to be able to reproducibly attain cessations in a neurophenomenological context. We welcome anyone to compare such data to the open science data set found at <https://osf.io/srfnz> and publish their results.

Author Contributions All authors wrote and contributed to the manuscript.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Competing Interests RvL: No conflict of interest. AC: No conflict of interest. DMI has authored the book *Mastering the Core Teachings of the Buddha* that this paper references. He volunteers to run as Board Chair and Acting CEO an international research charity, Emergence Benefactors, whose fundraising and public relations campaigns might benefit from the publication of this study. MDS directs the Meditation Research Group at McLean Hospital which has received research funding from co-author and case study subject DMI.

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