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Beyond Frontiers: Meditative Practice, Clinical Practice and Scientific Research

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Abstract

In conjunction, meditative practice, clinical practice and scientific research could be a good way to understand the phenomenon of the states that occurs in meditation/mindfulness based on the potential breadth of perception that this conjunction may offer. Based on this triple approach, this paper develops a new way of categorizing the states of consciousness that can occur during the practice of meditation: One Mind (OM), Silent Mind (SM) and Penetrating Consciousness (PC). The authors have been involved for decades in meditation and clinical psychology as well as in nonlinear dynamical systems (NLDS)-based research on the novel way in which these theories partly structure and integrate these new challenges into Western psychology.

Keywords: Meditation; Mindfulness; Meditative states of consciousness; Ventral breathing in hara (VBH); Nonlinear dynamics; First person perspective; Neurophenomenology

Introduction

Beyond concepts

Mindfulness is a controversial word when it comes to designating a certain experience that comes from Eastern meditation. We know that meditative practices are largely based on a process of subtraction aimed at the experience of "emptiness" so rather than mindfulness, we could speak of "mind emptiness".

Research into the field of meditation as an experience that is difficult to "narrow down" in concepts is experiencing ups and downs. The heterogeneity of meditative states, the difficulty of controlling the degree of experience and how to properly apply traditional techniques has given rise to significant inaccuracies. This complexity results from bringing into play the ontological foundation of all reality [1]. So, it is logical for there to be difficulties when it comes to reaching a consensus about how the cognitive, affective, trait-and-event-related processes are produced.

From experience, we know that, in their teachings (Dharma), Buddhist teachers often state their intention to free all beings from suffering, but they differ in their techniques and in the traditions, and this also has consequences when defining the study. As we can see in the different schools of psychology, the subject/object relationship is complex, as is the disappearance of this duality in certain degrees of meditation, because the experience of non-duality in deep meditation posits a reality whose nature seems to be beyond concepts.

Duality also exists in scientific research if we examine the first person/third person perspective. Could it be understood as the first person pertaining to the context of insight and the third person to that of "outsight"[1] We can link these level-based differences to awareness/meta-awareness: (that which is) mental/ (that which is) metamental.

For the Zen master, escaping this duality is simple: his sentence is "Zen is Zazen" (the action of meditating on the cushion) and thus he quiets his body in a practical fashion, halting the psychic flow, accessing the world before thought.

Stopping and controlling the mind appears in Eastern teachings. Keeping the volatile mind attached to physical sensation, for example, extends to the practice of Iyengar yoga, as our experience has shown [2]. In other schools, this process is more varied and ranges from recitations of mantras, breathing techniques, focusing on an object, objectless meditation, centering oneself on compassion, and so on. The difficulty is that, in science, there is a requirement for objectivity on the perceptual level of researchers, empirical measurements, results. The challenge is how to create boundaries where they seem to be blurred, given that these meditative states gave rise to a method like mindfulness which has been recognized as valid for health. It has been recently defended that verdicts in consciousness science are inseparable from "how we understand ourselves; it concerns what is most intimate to our very existence". This could mean the founding of a "second order" science [3].

There are researchers who attempt to respond to this challenge by standardizing criteria in the midst of the broad diversity reflected in the many related publications on the subject. It is claimed that research should also be based on traditional texts, as they provide comprehensive descriptions of the variety of meditative states [4]. The generic use of the term meditation produces confusion, evidence of a well-known fact: the translation of Eastern terms can affect the essence of meditative experiences and, thus, it is necessary to establish distinctions between – for example – method and state and to establish guidelines to give direction amidst the diversity of practices and schools [5].

Perhaps the active Western mind is falling into samskara, the tendency to action-reaction. In this sense, we would more likely be in the mind labyrinth, present in publications and personal communications among colleagues. Which means – to put it succinctly – difficulties based on disagreements, overlaps (since the translation of a word does not imply the translation of a state), dual complications in terms of the analytical and the non-analytical, the affective and the non-affective, defining, specializing, operationalizing...and to which trivialization is sometimes added in the "quickie" approach to age-old teachings. Perhaps this difficulty also suffers from insufficient perspective if we limit ourselves to

[1]Author's neologism

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intellectualizing meditation, which gives an idea of the complex Western landscape in relation to mindfulness and meditative practices.

Science, however, is proving useful, especially when it comes to identifying mindfulness as a valid method for accessing at least some "happiness". Given that the human mind is a "wandering" mind and that a wandering mind is an "unhappy" mind, this comes at an emotional cost and is a cause of unhappiness. This is the conclusion of an extensive study of 2,250 adults in their daily lives [6]. And we already know that dissolving the wandering mind and stopping the thought process are among the first targets of meditation/mindfulness.

As research progresses, the main stumbling blocks arising from the contradictions related to the lack of consensus in measuring cognitive processes within the framework of mindfulness appear: non-judgmental attitudes, openness to experience and no personal identification [7]. These differences will be even more profound in more complex processes, such as the experience of non-duality, compassion, and so on. The first person/third person relationship seems to be establishing itself as promising for clarifying scientific results. First-person testimony is valuable phenomenological data. And, from our perspective, recognition must be given to the right to subjective "truth" which, in science, needs to be compared to objective "truth" to the extent possible from the third person perspective. Given that first person testimony may be less than unreliable, it therefore also appears to be necessary to do research from, for examples, the perspective of the "third person semantic paradigm". There are proposals aimed at doing this; they consist of establishing methods with instructions, strategies and techniques in different meditative states which can also include supportive neuroscientific findings [4,5]. There are pioneering theoretical propositions in this vein [8,9].

There is research based on long term meditators who are seeking access to that subtle world, to the nature of the sense of boundaries (SB) [10] from both sides – the first and third persons – and to establish a communication bridge between the two perspectives. It is based on the fact that a long-term meditator has access to his internal experience, is permeable to these boundaries and, therefore, can talk about it. He is able to cross difficult stages, from a dissolving SB to a disappearing SB [10].

Terms that are well-known in the traditions of origin, like equanimity [11], awakening [12,13], self-transformation [14], selflessness [15], non-dual experiences [16] or enlightenment [17,18] are – finally – being studied based within Western scientific paradigms.

Despite this complexity and difficulty, this meeting of science and meditation just might be opening an East-West path of synthesis between a world of "revelatio" (transmission of knowledge) and "rebellation" (based on scientific research) [19].

These are the reasons for our proposal in this article that the study of meditation/mindfulness should be done based on the synergistic conjunction of three aspects: meditative practice, clinical practice and scientific research (Figure 1). We believe that understanding and feedback among these three areas is essential to the practice of meditation/mindfulness finding its rightful place in the clinical and scientific fields.

In addition, the study of the neurological correlates of different meditative states is providing valuable insights [4]; we agree this is a promising research field. To this end, this paper proposes a new way to classify three states of consciousness based on progressive depth: One Mind (OM); Silent Mind (SM) and Penetrating Consciousness (PC).

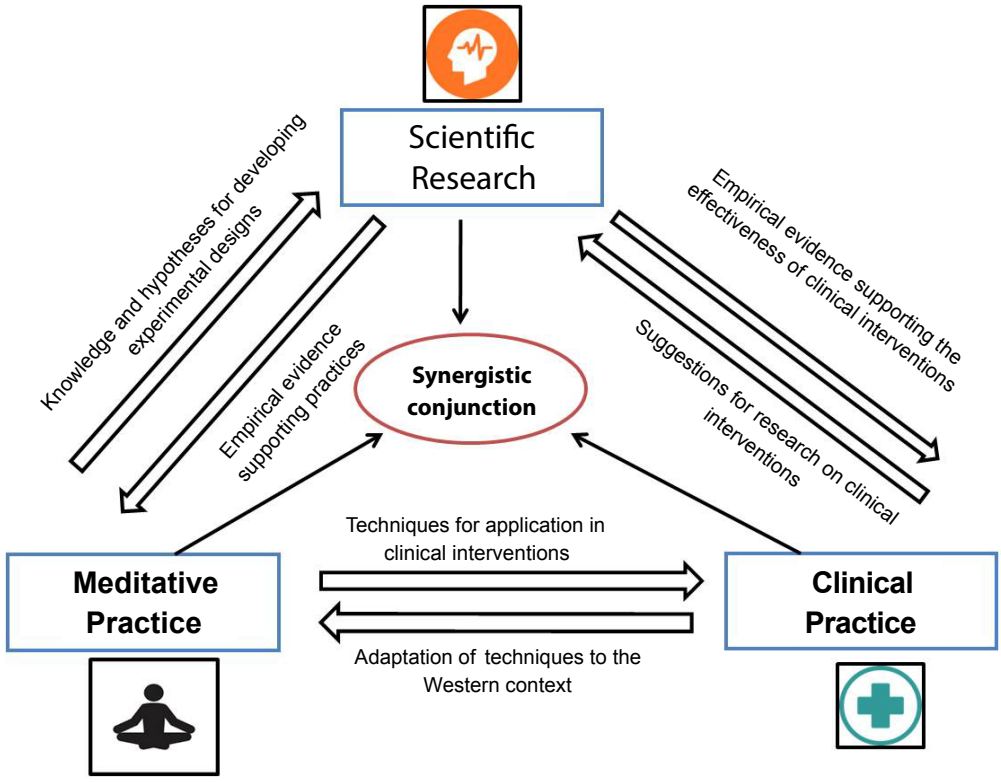


Figure 1: Triple approach: Synergistic conjunction of meditative practice, clinical practice and scientific research.

The paper is structured as follows. After Section 1 (Introduction), Section 2 includes a critical reflection on the use of meditation/mindfulness in clinical settings and how it is addressed in scientific publications. Section 3 lays the foundations of the theories the authors base their work on: nonlinear dynamical systems (NLDS). Section 4 describes the classification into states based on the combination of the three aspects: meditative, clinical and scientific. Finally, the conclusions are included in Section 5.

Criticisms and Beyond

The East-West "transfer" of the meditative act and of language are cause for both criticism and research.

It should be noted that Kabat-Zinn [20,21] introduced full attention into clinical practice as a motor of transformation and awakening necessary for physical, emotional and spiritual health. Open-hearted, moment to moment, non-reactive, non-judgmental and always in the present, this practice would allow knowing things as they really are. It can even facilitate survival and form part of the process of selection and evolution.

Meditation/mindfulness has been applied in a wide spectrum of clinical settings, being the number of publications on the topic overwhelming. The most known example is the MBSR (Mindfulness Based Stress Reduction Program) designed by Kabat-Zinn [21]. But we can also find important applications in areas such as the treatment of depression, chronic pain, fibromyalgia or eating disorders. As it is not possible to include here a comprehensive review on the thousands of empirical research studies on the topic, a selection of key recent reviews is suggested [22–27]. In addition to these, other studies have been conducted following an integrative approach between traditional and clinical perspectives, with the support from relevant representatives of the origin traditions, such as the Dalai Lama or Mathieu Ricard [28].

Need for time and need for practice

Regardless of the lack of agreement on how to define mindfulness and of compatibility between the Western "product" and its Buddhist origin, the widespread criticism leads us to the need for there to be a broad meditative practice linked to the research. Unfamiliarity with meditation practice and using inconsistent questionnaires can cause confusion when measuring inattentiveness, and the lack of other abilities that may not fit with mindfulness [29]. This demonstrates that scientists cannot remain distant from their inner experiences [30]. And it would hardly be desirable to reduce the meditative experience to a virtual world in relation to the issue that "the world really is inside my head" [31]; Monserrat [32] constantly defends the value of the phenomenological experience, agreeing with Maturana and Varela [33,34].

Perhaps language doesn't fit the depth of the experience, and this may be even truer for the maturity of a long term meditator. However, in everyday language (in some languages) we find the word "inspiration" (inspiration/breathing in), close to "illumination/lit up" and "expiration" as the time of death. Breathing in and breathing out as well as "dojos" – the spaces between the two processes – are well-known to long term meditator and, therefore, to the authors of this paper, differences that we believe worthy of investigation.

Some criticisms focus on the fact that some self-report questionnaires can denature, distort and banalize, i.e., decontextualizes long-drawn-out Buddhist practices and even provoke rejection towards mindfulness [29]. Others aim at the creation of new technology based on first-person subjectivism and the indiscriminate use of the word "meditation" and, therefore, propose distinguishing between method and state, while taking into account the difficulty of capturing the essence of these ancient practices [5]. The complexity increases if qualities like compassion, kindness, and so on come into play. And there is criticism from the Buddhist side, including the question of whether mindfulness might be the new opiate of the masses [35]. Western culture is blamed as the cause of alienation and narcissism. To treat this, psychology conducts research based reductions and elisions in order to adapt the method of meditation in order to treat symptoms without regard to its/their origin. Profit, productivity, efficiency and instrumental rationality as principles of modernity would seemingly be part of trendy psychological treatments aimed offering happiness, productivity, competitiveness and sales, in a process that despiritualizes the meditative practice [35]. The divergences may reach levels like "Mindfulness is the heart of the Buddhist teaching" -Hanh (1998) in (7). Some researchers used the word "meditation" in relation to different practices and proposed a guide to clarify this process [5]. Other researchers use meditation-mindfulness for the aforementioned experiment on the SB in which the boundary between inside and outside disappears in long term meditators [10].

Beyond the discussion

Perhaps the level of "lack of sense of boundaries" reached by the meditator in relation to insight/"outsight" could serve to clarify the regenerative and evolutionary processes in this practice. If the level of SB experience could define the individual (insight)-world ("outsight") relationship, in a broad sense, this would be connected to the concept of autopoiesis as a process that elevates a system from its limits [33], even to the point that it could define personality.

If we take the word of a renowned Zen master – it's only fair to examine both perspectives – on how to define "meditation", we find that, based on Bodhi dharma, Zen is: KYO GE BETS DEN (a special transmission outside any doctrine); FU RYU MON JI (is not based on words or letters) and KEN SHO BUTSU (leads to seeing reality and attaining the state of wakefulness). That is, we find that it seems that the essence of meditation belongs to the realm of the ineffable, which is accessed by the transmission of a specific practice and, after the practical achievement, the name is understood. Even this master notes that it is trivializing the essence of Zen to reduce it to a therapeutic fashion [36].

It is also interesting to consider what happens when a psychologist joins a prestigious Zen Center. He had studied psychology but saw it as "I knew a lot of stuff but I didn't know anything about life."..."flawed and ironic since it wasn't really about creating comfortable, stable people." [37].

Beyond the differences on the trivialization and devaluation of meditative practice, we understand that there are plausible proposals whose intent is to create bridges between eastern and western mentalities. We understand the initiation process of this bridge to be the proposal of Kabat-Zinn [20,21]. Our impression is that mindfulness is, effectively, a reduction in the deep meditation process aimed perhaps at making the aspects more accessible for the speculative and wandering Western mind and thus making a treatment feasible for psychotherapy based on one's perception of oneself when calm. Another achievement would be to conduct feasible scientific research projects that would open the door of the all-powerful Western science. That is the merit of Kabat-Zinn [20,21], among others. Particularly praiseworthy in the research is the bridge between first person, third person based on the

communication established between the two after the dissolution of the SB in the research of Ataria et al. [10].

For Varela et al. [34], the Buddhist practice of pure presence and full mindfulness, practiced by Varela himself, is aimed at reaching a state of awareness, experiencing what the mind does in the process and always being present with the mind. Trungpa [38], on the teachings of Abhidharma: rather than meditating on a specific thing, meditation is used to access a higher state, a state of trance or absorption. Varela was a follower of Trungpa. There might already be a difference between mindfulness (awareness) and meditation (absorption/no duality). One of our synthetic definitions for mindfulness might be "non-judgmental complete self-perception which provides being aware, moment by moment, without identifications." Given that the state of non-duality, dissolution of boundaries – SB – in [10] would fit within the scope of what is experienceable, but difficult to define.

But there is one very important aspect: Meditative practice and clinical practice (Figure 1) are reaching a convergence. The Christian Zen master Lassalle [39,40], the Vipassana master Dhiravamsa [41] and Prof. Dürckheim [42] championed the meeting point between psychotherapy and meditation. There's a precedent for this; it's commonly said that the Buddha advised his disciples to experience things for themselves. Obviously, there are difficulties for these kinds of subtle practices; so much so that Krishnamurti dissolved his organization in 1929, and there are even popular sayings like "the truth is a pathless land".

In this synthetic convergence, Francisco Varela appears as one of the greatest exponents, and we were able to share these concerns with him. Full attention, full without judgment and to raise the level of consciousness of the scientists to rediscover their own interiority [34].

Psychology professor Prieto reminds us that, behind psychology's hallmarks stand psyché and lógos, which are relevant for understanding meditation. In ancient Greek, psyché meant breathing, blowing, breath; in Chinese, it's qi or chi and, as they have evolved, psyché and chi have come to mean life energy, flow, spirit, strength. The roles given to the notion of "psyché" in Western psychology and to qi, ki and prana in Eastern psychology are not superficial [43]. The proof that this synthesis is productive can be seen in koans and haikus applicable in our contemporary world [44]. Haiku could reflect the eternal moment that might well be the essence of meditation, hence its difficulty to capture in ordinary language.

Today, in scientific research, we see that the words "meditation" and "enlightenment" are being accepted. Maybe we'll call this aspect "spiritual" because we don't find another word that's been a pillar of modern science and that hasn't been given the attention it deserves. The inclusion of spirituality-related issues is increasingly accepted in scientific research [45]. For example, the spiritual aspects of Piaget's work, in which the spiritual is established as the primary motivation moved to infinity, where dualisms transcended once they were framed within the theories of complexity [46,47]. This renewal could form part of a co-creative process [48].

Meditation and certain types of prayer in the Western tradition share similar practices that are sometimes not well recognized. Saint Teresa of Avila (1515-1582) distinguishes among mental prayer, imperfect contemplation, prayer of unitive praise and perfect contemplation. Her "moradas" are the stages of consciousness reached by her as she progressed toward a mystical state of totality [49-51]. The highest degrees of St. John of the Cross's (1542-1591), contemplations lead us to perceive light without forms [52,53] which appears to relate it with Vipassana meditation. We could even say that meditation as a mystical process matches the reports we get of some shamans in Mexico and the Amazon [54,55].

To finish this section – and in response to some criticism – perhaps the possible reductionism of mindfulness might give rise to a devaluation of meditation because, in principle, the goal of meditation is to reach enlightenment, which should not be reduced to mere well-being. From our experience, it seems that it is more complex to define "meditation" than "mindfulness". Perhaps mindfulness could remain as a valid and psychotherapeutic practice at this level, especially if researchers are faithful to the principles of personal practice and science and not those of a fad. This will provide clarity and authenticity to mindfulness and dignity to its origin. We also propose that mindfulness be based on a self-perceptive awareness, a mind that is present moment-to-moment in a psychological space that allows for quietness and stability; and meditation (in addition) in a meta-awareness that would entail complex states of consciousness and states of non-duality. We can always ask ourselves if meta-awareness was the origin of awareness. Perhaps through meditative practice/mindfulness, with awareness attained, meta-awareness is reached, which suggests that mindfulness becomes a bridge or gap.

Regarding meta-awareness, we can ask whether the experience of non-duality – which is the basis of Advaita-Vedanta [56] - constitutes in and of itself the basis for accessing the benefits of meditation and mindfulness and also, as mentioned above, whether these states of consciousness could constitute a universal experience in the multiple practices based on Native American, African, etc. traditions [55,57]. It is important to ask whether, in terms of clinical practice, all these forms of knowledge are harmless, or whether they require a more complex therapeutic process because – as a Zen meditation teacher told us – meditation as relaxation is a joke. He agrees that it is wrong to interpret Buddhism as relaxation [1]. At seminars and in personal communications, teachers and monks have told us that deep meditation can lead to certain symptoms, and that Eastern and Western monks should keep their minds occupied, either in prayer or work. We have been witnesses to, for example, a subject rising abruptly from meditation with threatening shouts. And in our clinical practice, we have encountered patients/students who have emotional expansions like joyful tears and connections with nature. On occasion, we've treated patients who, after intensive meditative processes, come in with serious losses of personal boundaries, splitting, severe confusion, unknown energy sensations and symptoms that could be diagnosed as psychosis. In our extensive clinical practice, we've also treated chronic, listless long term meditators. Not surprisingly, monastic rules like the *Sancti Benedicti Regula* [58] states that idleness is the enemy of the soul. Saint Teresa of Ávila and St. John of the Cross suffered some symptoms but, in any event, the appearance of some anomalies is not the enemy of holiness [59]. All this will require further investigation.

A Potentially Synergetic Approach: Combining NLDS Theories and First/Third Person Perspectives

From the perspective of the authors, based on their clinical and meditative experience [19,60], NLDS theories have great untapped potential.

The Oxigeme process: A process for a psychology of consciousness

The discovery of methods and their results in our clinical practice have gone hand-in-hand with the process of meditative

practice in schools incorporating these traditions, with the occasional collaboration of the presence of some eastern teacher. In this regard, we intend to bring clinical practice together with meditative practice (Figure 1).

Our experience in the meditative act and schools: The meditative act in personal practice in the school of Deshimaru (1914-1982)– the Japanese Soto branch – was to give instructions on how to practice zazen and how to position oneself bodily and mentally, almost militarily [61]. "Mushotoku" pronounced as a samurai is an experience that one has to live through practice and teaching, and entails connecting with the inner Buddha; when one lives it, one lives it and no words are needed. This experience occurs gradually.

Sahn's (1927-2004) motto was: "We must reach the mind before thought" [62]. The seminars consisted of taking us to a secluded spot, getting up at four o'clock, and facing him with his stick and his gray habit, with a book, some pictures and a koan. He showed me his stick in his hand and asked, "What is it?" He advised: "just reflect." I answered what he had shown and I felt a sensation of fulfillment. The rest of the day was sitting cushions and some soothing songs. His rule of conduct says "Do not pay attention to what's in your mind". It turns out to be very valid, because putting your mind on an "altar" results in a very serious process, especially when the patient does so in its inquisitorial form. We have used this rule, coupled with our clinical/meditative method. The focus on ventral breathing in Hara (VBH) – which we'll explain below – facilitates the release of this obsessive judgmental mind when it is "passed through" and overcome in a bifurcation process [19] until silence is reached. Buddhist practice recognizes that judgmental mind, hence the existence of dharma (teachings) on it, songs and mantras that we have used in the dojo (meditation center), for example, PA DGI-OK D GHI-ON, the "mantra of shattering Hell" in Sahn's school [62,63].

We have worked together on psychotherapy and meditation with the Vipassana Master Dhiravamsa [41]. This master sees the VBH meditation process as being connected to personal conduct and wisdom. All this is based on focusing on a pure, objective and direct observation of the movement of spiritual energy and its source; it requires consciousness of non-attachment, non-identification and non-obligation.

The contribution of Karlfried Graf Dürckheim, Professor of Psychology and Meditation (1896-1988), has been very important in the Oxigeme Process. The practice of VBH, – we use the word "Hara" out of respect for Japanese tradition- which is based on the body (hara) being rooted in the earth, as well as in contemplating the dimension of the existential being (temporal) in relation to the essential being (a-temporal) [42]. Meditation, following Dürckheim, prepares on for the possibility of an experience of being and for one's metamorphosis into a witness of this experience, awakening within a universal understanding of the human being and its possibilities.

Clinical practice and NLDS theories: The change that Prigogine and Stenger [64] gave to the second law of thermodynamics by which the thermal death of the universe, entropy, can be "reborn" toward a new evolutionary order is key in the science of the twenty-first century. The scientific line of this model is developed in the book Chaos Psychology & Psychotherapy [19], also following the ideas of Prigogine and the "autopoietic" and enactive processes which means the possibility of making a world that emerges between the coupling of the system and its surroundings) [33,34,65]. And it is in that meeting when the triggering of creativity - moment-to-moment - could be produced. Merleau-Ponty [66] and Varela [65] were very critical of the pre-given structures, since they would stagnate the dynamic processes.

The work of Prigogine – who is genuinely evolutionary in his approach – has been fundamental for us [64,67-70]. Based on his proposition that that complex and open systems – the vital process – do not necessarily gravitate towards destruction and the wearing out of closed systems, but towards to the creation of new orders and new possibilities of life after overcoming entropy. This connects with the principles mentioned of the "positivation of the pathological" [19,60]. There is considerable acceptance that the complexity and fractal nature of the brain permits quick reorganization [71]. Some have a more critical posture, stating "The current [paradigm] for the brain, adapted from the molecular biology of Crick and the autonomic nervous system pharmacology of Dale, will not work anymore" [72]. The solution, from Mandell's point of view, comes from understanding the nonlinear dynamics of complex systems: order, disorder, bifurcation [72].

The Oxigeme Process's clinical and research framework lies in complex and open systems and NLDS. Prigogine and Stengers [64] state that the important thing to remember when studying complex systems is our limited capacity to understand them. It is as if it guards its own meaning within the confines of its boundaries.

For us, to understand the disorder is to understand the challenge of meditation when certain exceptional states of consciousness appear, starting with "stop the mind" and opening up to the emergence provided by silence. Resolving the divorce from the inner world [34] and resolving the rejection of and resistance to silence one "normally" has when, for example, certain individuals prefer an electric shock to staying in a room by themselves with nothing to do but think for six to 15 min [73].

Disorder is understood as being essential to the evolution of complex systems, including human systems. Masterpasqua, distancing himself from predictability and linear thought, states that "chaotic phases in human development and "psychopathology" only make sense if we understand the individual's life course as an evolving, emergent system" [74]. The research is fruitful, judging by the findings [75]: chaotic activities of the brain and the heart became more coordinated during MBSR meditation, suggesting that mindfulness training may increase the entrainment between mind and body.

Our starting point is two principles: the differentiation process inspired by Spencer in 1855 [76] and the positivization of the pathological as the basis for the symptom-based reorganizational process [19,60].

The importance of memory in the Oxigeme process: For Abbidhamma Buddhist tradition, registered consciousness is the final stage identified by Abbidharma texts in which the experience of running consciousness becomes stored in memory [77,78].

"For the soul to come to unite with God, one has to give up possession of all the memory..." [52] "Neither must one fear that the memory will be emptied of its forms and figures..." [52]. Paraphrasing St. John of the Cross, the master Enomiya-Lassalle states that when you have managed to kill the memory, you are in a situation only one degree from perfection [39,40]. In relation to the Buddhist technical terms "Strictly speaking smrti – literally, means "memory" is the focusing aspect of mind, and historically it is often translated as mindfulness" [1].

Regarding the role of memory in meditative practice, that of the Default Mode Network (DMN) is becoming more relevant [79]. It is believed that the DMN – which becomes active when one is at rest,

apparently without any demands requiring it – is related to the so-called stimulus independent thoughts (SITs), a concept closely related to that of mind wandering. Another possible explanation is that DMN activation could be related to an activity that is "being prepared for the future" [80], as Ingvar so eloquently describes as a "memory of the future" [81]. "This may be especially fruitful for what concerns the function of the DMN in enacting and looking out for environmental confirmation of a model of the self-based on autobiographical memories" [82]. Thus, without apparent motive, thoughts related to self-referential aspects appear in relation to an autobiographical memory, to a "narrative self" [83]. There is a default mental trigger in relation to a "before" (refractory thought) or a "possible after" (anticipatory thinking) [84]. These concepts are closely linked with the distress that having ruminative thoughts or being worried about the future can mean for the person. In the practice of meditation/mindfulness, in which the aim is to live in the "eternal present", the "alterations" appear in the sense of space and time [85,86]. Again, we are speaking of the disappearance of boundaries, of frontiers [10]. Numerous studies relate the experience in meditation to changes in activity and connectivity of the DMN [87-91]. In other words: "meditation training leads to functional connectivity changes between core DMN regions possibly reflecting strengthened present-moment awareness" [92].

The shadow of memory as an important part of the source of suffering. Identification of the inherited memory: The symptom could be a messenger of non-linearity so how can we know the laws of psychological processes expressed essentially through a continuum of non-linear emergences? [19]. The Oxigeme Process works with the whole person dissolving the shadow of memory (first cycle) personal process, therapy centered on the problem and the person in order to prepare the way to the experience of Being (second cycle). The application has led for thirty years to a co-creation of actions, responding to the needs of the individual of the twenty-first century - innovations to the meaning of life. Our clinical protocol is complex, but it consists of the discovery of the "inherited mold" and the subsequent process of subtracting what we call the "shadow of memory". This mold is composed of "attractors"; for Varela [33,93], the "attractor" is characterized by the fact that it attracts the emergent properties of dynamic systems. For us, fractals (negative patterns) are defined as a complex unit of behavior at the levels of body, thoughts, feelings and consciousness. Fractals make up the dissipative routes; these routes make up the armors, so that all this – together with family traumas – forms the target of the therapeutic process [19,60]. Attractors, fractals, dissipative routes (characters), armors, and traumas are interconnected in complex ways in the individual psycho-physical structure. In the clinic, it is clear what negative behavior fractals (patterns) and resulting mental ruminations produce disease.

Varela [93] also explains the complexity inherent to neuronal functioning, which is of interest to us since he states the necessity for studying neurons not as isolated entities, but rather as "members of large groups that appear and disappear through their cooperative interactions...where each neuron has multiple and changing responses" [93]. And where symbols more than items are complex patterns of activity [93].

Prigogine [70] presents the idea that the key lies in crisis and instability as a framework for the life process. We have coined the term "Emergent Crisis" ("EC") from a point of view which considers human systems as complex and open, and bearing in mind modern chaos theories, we can see that Emerging Crisis represents a natural – non-linear – phenomenon. The phylogenesis is in the ontogenesis. EC is the form of a psychological crisis that emerges and breaks the order which is considered normal offering if it is respected a reorganization of the person's life [19,60].

The work leads to exhumation of personal memory and family genealogy, as we shall see; and to exorcising, in the psychological sense of the term, a lot of corpses of ancestors with whom there are unresolved issues. The key has been to find a theoretical and practical methodology for healing and the dissolution of that memory; that is to say, the obstacle is the lever. The first cycle consists of the patient configuring the shadow of the inherited memory; and the transformation-healing of fractals, routes, armor and trauma—also of the arguments (stories), vital burdens that condense within the dissipative skein.

Vortices: We'll mention just a few processes in order to not overextend the article.

Vortex A—SIB "sensitivity- instability- bifurcation process—represents a triadic base process that constitutes the dynamic structure of the dissipative process, as we have been able to order it. It is the base that fractal tends to develop sensitivity that gives way to instability until its resolution at the maximum point of system disequilibrium when bifurcation occurs. The relation of the SIB vortex with the three meditative states described in this paper (OM, SM, PC) is explained in Table 1.

Therefore, "sensitivity" is the irruption of something that breaks the linear, which opens the door of differentiation, thereby accessing the emergent. The subjective opens up starting with "sensitivity." The individual is a system open to psychological transformations within the environment. "The key words there are nonlinearity, instability and bifurcation. In brief, this means that "if we drive a system sufficiently far from equilibrium, its state may become unstable in respect to perturbation" [67].

The importance of the process of bifurcation as a reorganizational process needs a brief explanation. Bifurcation has definitive consequences. In fact, Prigogine himself [68] states in his latest book: Once we have dissipative structures, we can speak of self-organization. "...There are still many states available to the system among which it chooses as a result of fluctuations. Such conclusions are of interest beyond the realms of physics and chemistry. Indeed, bifurcations can be considered the source of diversification and innovation" [68]. Processes of bifurcation are seemingly essential in psychology [94].

"Bifurcation" as the point of maximum differentiation means a healing and transformation of the individual as a whole. Bifurcation means the maximum differentiation of the system, the maximum symmetry breaking a) Beyond the limit. Beyond a critical point b) Appearance of new states. New orders. Healing appears c) The need to go beyond the limit. Transformation involves the memory, energy: heat is symbolically like a metaphorical gradient. Therefore, this is a transformation that involves the totality of the individual.

The irreversibility-event-coherence (IEC) process entails the existence of more vortices; "unpredictability-complexity-self-organization, (UCS), etc. that, for reasons of space, we cannot address. More information in [19].

We discern some connection with research by Berkovich-Ohana and Glicksohn [95] in terms of concepts such as minimal self (MS), narrative self (NS) and, especially, extended consciousness (EC) (which support NS) and which especially involves memory of past. That is to say, a likely connection between the Oxigeme model and the CSS (Consciousness States Space) model [95] conducive to a unifying

Meditative State of consciousness	One Mind (OM)	Silent Mind (SM)	Penetrating Consciousness (PC)
Vortex phase	Sensitivity	Instability: Increase of silence that creates a special meditative tension	Bifurcation
Subject-object relation-ship	Dual	Dual	Non-dual
Description	Thoughts gradually disappearing	Thoughts almost disappear	Experience of deep silence
Technique type	Focus on physical sensation VBH	Focus on VBH but already in process of dissolution	No application of any technique
Effort level of the subject	Effort to keep the focus on Hara	Effort gradually decreases	There is no effort: The * rule is "Do not intervene"
Intentional consciousness	Yes, it must be maintained at all times	It gradually disappears	There is no intention: experience of non-duality
Level of consciousness	Awareness	Awareness	Meta-awareness

Table 1: Characterization of the three meditative states of consciousness.

model for consciousness. This model could provide phenomenological maps [96] that include all possible consciousness states.

A Framework research proposal

However, the panorama of the scientific research is somewhat uncertain: how is science approaching the study of meditation? We start from a surprising fact: despite the numerous publications dedicated to researching meditation since the 1960s, no consensus has yet been reached about a theoretical model that substantiates why and how meditative practice produces its effects [25,97-99].

As shown in Section 2, a large part of the literature that provides empirical evidence on meditation has used the term mindfulness, although it has been used (in a somewhat confusing fashion) both as a psychotherapeutic intervention (mindfulness-based interventions) and as a psychological construct (a trait or a state) [100-102]. Much of the research has been carried out with pre/post methodologies focused on the effects of therapies based on mindfulness with patchy evidence regarding their "positive psychological effects" [22-24,103-107]. There are no unanimous answers about the duration of meditative practice needed for lasting changes to occur, nor on whether to continue the practice so that the changes remain [108].

Many of these problems arise because researchers have no personal familiarity with the meditative practice: we're talking about the need for greater and richer interaction between the practice of meditation and scientific research (Figure 1). This is the aim of the so-called "contemplative science", which seeks to combine first person methods with scientific research [109-111]. As they recently stated, we're in "a new era for mind studies" combining meditative practice and scientific inquiry" [109] in line with authors who insist that neuroscientists should experience for themselves (in first person) in order to understand what they measure as a third person [112,113].

Combining first and third person data: neurophenomenology: A theory: In any complex and open system in which dysfunction occurs, it is in the dysfunction itself where the reorganizing processes that make the system's evolution possible are located.

The first person/third person perspective and its measurements appear as a way to clarify this. In meditative practice, there is knowledge based on the (first person) transformational experience that would be healing per se and which can be enriched with scientific/intellectual knowledge (third person) that cannot, in and of itself, replace experience. "Qualitative" and "quantitative" are not mutually exclusive concepts here, even though that which is qualitative includes developing the full human potential, in the case of meditation; to achieve the ultimate, enlightenment, satori, which – by their very nature – seem indefinable.

There are contradictions to emphasize. The subjective experience valued as a source of personal questioning may reflect profound differences between psychology and traditional texts, such as those related to practices found in Buddhism [29] or in the Indian yoga tradition [4]. To which we must add the suspicion with regard to subjective error and a certain "myth" of objectivity in scientific culture.

In this sense, neurophenomenology– a term coined by Varela [114–116] is an intensely active field with regard to meditation/mindfulness: it is to combine the use of "first person" data (what the subject says of his experience while meditating) with "third person" data obtained from an external measurement (e.g. EEG, fMRI, PET or MEG). We are talking about combining what happens in meditation practice with scientific research: joining two areas in Figure 1.

It has been shown that the combination of first and third person data from the approach of neuro-phenomenology [109,117-119] helps provide evidence to test hypotheses concerning theoretical models which can then be further contrasted. In these investigations, the subject's instant data "insight" of his "awareness of" is used (for example, awareness of having entered into mind wandering) and combined with a record of "outsight" obtained in third person at that moment. It is not possible to include in this article a full review of these studies; due to its relevance, mention should be made of the sophisticated design [118-120] in which real time neurofeedback is used to investigate the relationship between the perception of "being meditating" and posterior cingulate cortex activation (PCC). Another study about the perception of mind wandering is the one by Hasenkamp [87,121]. Also noteworthy is the work of a team of Israeli researchers [10,85], as some of the most innovative research integrating first and third person perspectives.

Non-Linear Dynamics of Meditative States of Consciousness: A Novel Categorization

Three progressive levels in the Oxigeme meditative process: one mind (OM), silent mind (SM), penetrating consciousness (PC)

We can consider them expanded or exceptional states of consciousness. We can refer to fact we also found the various states of consciousness that occur in meditative practices [5] in clinical practice.

Our clinical/meditative method is somewhat similar to that proposed by Nash and Newberg [5], in an effort to unify criteria. We found some similarities in relation to Zen, although in the Soto branch, since we do not use koans. The techniques are simple: (1) We do not use concentration or repetition or analysis, only the rule "do not intervene" in breathing, focusing on VBH and "letting it happen"; (2) No koans; (3) No particular knowledge or belief is required; (4)

Eyes closed/option of having them half open; (5) Static; (6) Non-verbal; (7) Sit in the correct position, backbone straight, on a chair, cushion or bench; (8) There is therapist-patient interaction. In some ways, our work is similar to the idiosyncratic meditation proposed by Hinterberger et al. [122], in the sense of integrating different methods. We must add that the rule "do not intervene" is linked to another that is "let yourself breathe", whose aim is to enable the discursive mind to enter into meditative calm.

Practice focused on VBH. For us it is key to start practicing meditation in the Oxigeme Process with the focus on the VBH, also taking into account the legacy of Dürckheim [42]. To this we have added our clinical experience and found that the "normal" state entails a mental speculation that, when confronted, creates a shock for the patient/student. The focus on VBH helps center the practice, since the primary and closest purpose is embodied breathing fixed on a physical point two inches below the navel, which becomes a pragmatic approach to "unwander" the mind. The ventral breathing in VBH is the focal point of the embodied subjectivity itself and as vital breathing is a good substitute for the other focal points and also provides a direct entry to the meditative act. The wandering mind is gripped by persistent physical sensation. So VBH is a physical anchor in the belly with consciousness open to everything that comes without getting involved in the game of judging; accepting what arises and not being tied to it.

In VBH, we carry out two interconnected practices: We call "pure hara" the practice in VBH – sitting silently – and "daily hara" in everyday life that involves physically feeling the Hara point without losing one's attention to daily life; in reality everyday becomes more lucid. "Pure hara" opens to unlimited depths, and experiences appear that are worked on in the process. At first, we teach patients that thoughts always come in a rush at the beginning, as that reflects the "normal" state. But gradually they will disappear. "Pure hara" and "daily hara" offer an invaluable aid to anchor the mind so that it doesn't flutter. In "pure hara" the physical center will anchor and then allow one to sink into the vacuum. The projections of traumas and patterns (fractals) are gradually giving way to the gap. Finally the patient learns that it is not advisable to make an altar of the mind, especially when it comes with symptoms that can't be stopped, perceiving it dangerously as a dizzying and alien mind.

The ruminative mind has destroyed many lives and is a social problem, as we can confirm from our clinical practice. As a result, patients come to therapy with a loss of energy, chronic fatigue and despair, with psycho-organic symptoms. From VBH a "great insight" occurs when the patient checks that every thought, feeling, pleasant or annoying, simply changes and goes away by itself. The empty mind remains. Thus it can be seen that if you "attach" to the judgment – and in an inquisitor mindset that feeds back on itself in an unbearable fashion – you become caught in the web, buzzing like a fly between mental contradictions and toward certain destruction. This is a good metaphor for the ruminative condition on which too many people squander their lives. VBH could be its antidote. And although it appears to be a demon, the mind is not an enemy; is essential for going down the street. The red light means stop. One patient told us that VBH was like the runway of an aircraft; he remained stuck to it until – at once or after several attempts – he could finally ascend to silence.

Description of the three states/thresholds: The Oxigeme Meditative Process involves three thresholds: a) "One Mind" (OM): thought is progressive cutting with the primary point of Zen, an imagined or real tap of the hand (some prefer a blow). Here, some affective and cognitive processes can occur; especially at the beginning, the VBH focus is essential. b) "Silent Mind" (SM): the thoughts almost disappear. c) Penetrating Consciousness (PC): one enters into experiences of deep silence and non-duality.

In our research, we found that – after the foundation provided by experience – in VBH the process of "sensitivity" takes place in OM, in which thoughts are present in the subject-object relationship. In "instability" in SM, there are first-person reports of increased silence, increased meditative tension and depth difficult to describe: These evolve towards a sensation of oceanic nebulousness, since forthright thoughts in OM become "voices" that progressively distance themselves until all that remains is a "weightless emptiness". Already in the bifurcation in PC one arrives at a "fullness of emptiness" in the sense that, after the resolution of the latter process, the meditator describes it as a complete entry – there are no thoughts, nor can there be – an experience that we classify as within the states of non-duality.

Table 1 includes a summary of each of the three states; their characteristics are summarized below.

There seemingly is an intentional consciousness in OM that apparently disappears in SM to reach PC, in which the experience of Unitary Consciousness – non-duality – seems to take place [19].

OM appears to be related to Thoughtless Emptiness (TE) meditation in terms of the tendency to refrain from using thoughts, memories, emotions, associations, perceptions while this state is maintained [122]. This persistent focus on OM is related to the practice in Tibetan Buddhism called Samatha with regard to the use of breathing as a focus, and is extensible to other practices. Later, in SM level, and especially in PC, we find progressively more complex and delicate states where it is essential to "not intervene"; the focus on VBH is no longer as necessary unless the patient/student loses the state of silence due to the emergency of some distraction. Now in PC, the experience is to "plunge" into the experience of non-duality, no outside/no inside, beatitude and the invariant experience of non-duality and – although it could be understood as supra-psychological – it has beneficial consequences, as we have found that the patient/student opens up to the meaning of life itself. Both in SM and PC, there are other types of body/energy experiences that are difficult to explain and sometimes create certain puzzlement in the patient/student. However, because they are beneficial, the concern is easily dissipated. This phenomenon can be classified as "spatial perception" but of a limitless, timeless space and that is difficult to measure. Although there are already results from ongoing investigations, these will need further empirical advances. In some instructions specifically in spatial connectedness, it offers the opportunity to view and perceive an "energy stream" through the body axis [122].

A NLDS theories-based approach

In joint seminars in which the psychotherapy is directed by Oxigeme psychologists and meditation by Vipassana Master Dhiravamsa, we have attained important milestones in the coordination between the two perspectives with regard to the meditative practice based on going beyond desire, anguish and other neurotic states, maintaining the instruction of keeping oneself focused on breathing at any cost. It was a very big challenge for some patients and students, but the results in those who succeeded were that they experienced – after a kind of meditative vertigo – going beyond the "field of desire", culminating in the emergence of a silence that peacefully dissolved everything along with a sense of renewal. There was a bifurcative process within the NLDS framework.

We have been expanding as clinical practice has provided us with more knowledge. In OM, patients/students have been able to experience the subject/object (breathing) relationship, and the evolution towards the progressive dissolution of duality in SM in which the subject can perceive the perceiving subject itself, until reaching in PC the "I am the consciousness that perceives myself", which is a meditative experience of fusion between the phenomenological consciousness and the unitary consciousness experienced as a synchronicity of the part in the whole [77]. We also explain this unitary consciousness as continent consciousness – per se indefinable – unlike intentional consciousness. Hence the famous phrase: "The Tao that can be named is not the eternal Tao." This continent consciousness seemingly houses the experience of non-duality for which practitioners have no words. Some "mystical" poems try to express it. But the question remains: In the joint science/meditation research, will we someday be able to comprehend the nature of non-duality? Thus the title Beyond Frontiers and a Summary Thereof: We can summarize that meditative practice establishes that the essence of the subject is of the same nature as the essence of the object and that their fusion is a mystery.

Although it is difficult to define boundaries, we believe that in our OM clinical methodology, SM would more likely be part of mindfulness/awareness while PC would be part of meditation/meta-awareness.

First neuro-phenomenological approach to OM, SM and PC states

The classification of the three states of consciousness proposed in this article was used for the first time in recent research with a neurophenomenological approach [123].

The research – which was experimental – records the EEG activity of 12 subjects with different levels of experience with meditative practice during a five-minute baseline period and during a 20 min HRV meditation session. The research analyzes the relationship between the perception of the experiment's subject about in which of the three states (OM, SM, PC) he is in and his EEG activity.

After what has been analyzed in previous sections of this article, it is clear that there is no reason to expect a linear evolution of the three states of consciousness during meditation throughout the session. This is why it was decided in our investigation to study certain moments – microstates [124,125], including the difficulty of capturing the state of consciousness in which the subject is at any given time. Indeed, if the subject has to inform the investigator about his first person experience, he will lose the meditative state achieved. To minimize this risk, we decided to use the experience sampling technique (DES or descriptive experience sampling) [126], in which a bell is rung at three different instants within the 20 min meditation period.

The research jointly analyzed the electroencephalographic activity (EEG) data and the indication of which of the three states (OM, SM and PC) the subject was in just before each bell rang. It is not the purpose of this article to include the complete study, which can be found in [123]. However, it is worthy to note some of the most significant findings as validation for the usefulness of categorizing into three states.

EEG data were recorded utilizing a 64-channel EEG acquisition system, according to the international 10-20 system, having a 500 Hz digital sampling rate (BrainAmp, Brainproducts, Munich, Germany). The EEG data were analyzed using Brain Vision Recorder software (BrainVisionSoftware, Munich, Germany) with high pass and low pass filters set at 0.5 Hz and 50 Hz respectively, and a notch filter set at 60 Hz.

The signal was segmented into segments of 8.192 s (4092 points). A semi-automatic procedure was used to select segments without artifacts from raw EEG data, in order to remove EMG and other noise artifacts. This included a visual detection of artifacts and the application of an ICA (Independent Component Algorithm). Seven frequency bands were used: delta (0.5-4.5 Hz), theta (5–7.0), alpha1 (7.5–10.0 Hz), alpha2 (10.5–12.5 Hz), beta1 (13–20 Hz), beta2 (20.5–30 Hz), and gamma (30.5–50 Hz). Fast Fourier Transformations (FFT) were conducted on each segment in order to obtain power in each frequency band, and processed so that they met assumptions for normality. Electrodes were grouped and averaged by brain region: Anterior-Frontal (AF), Frontal-Central (FC), Central-Parietal (CP) and Parieto-Occipital (PO); each one divided into left (L), right (R) and medial (M), which gives a total of twelve brain regions.

After the 20 min period ends, the subject leaves the experimental room and is asked in which of the states (OM, SM or PC) he perceived he was just before each of the three bells rang. Figure 2 shows the distribution of states in each of the three bells, including a fourth additional state, in which the subject is distracted and not following the meditation instructions (this has been named as "mind wandering state"). This procedure allows collecting a total of 36 data (12 subjects x 3 bells), each one of them classified into a certain meditative state. This type of data collecting procedure is frequent in similar experimental designs [119,125,127].

As can be seen in Figure 2, the number of subjects in each state does not follow a linear evolution. However, as a general tendency, it can be seen that deepest states (SM, PC) are achieved by a higher number of subjects in Bells 2 and 3 (a total of six and five subjects, respectively), than in Bell 1 (when only three subjects had achieved SM or PC states). This result supports the idea that the study of microstates [124,125] is crucial when analyzing the evolution of meditative states during a single meditation period.

In addition, for each subject, power values (for each of the seven frequency bands and 12 regions) were calculated for the baseline period, and for each of the three segments just before each of the bells rang. Differences in power values between each bell and the baseline period were then computed. A non-parametrical analysis (Kruskall-Wallis test), jointly with the Mann Withney's U test, was conducted in order to detect whether statistical differences appear in power changes depending on the perceived consciousness state (OM, SM, PC). Statistical analyses were conducted using SPSS v20 software.

The most significant findings of the study concentrate on the gamma band (30-50 Hz). These include the evidence found that there

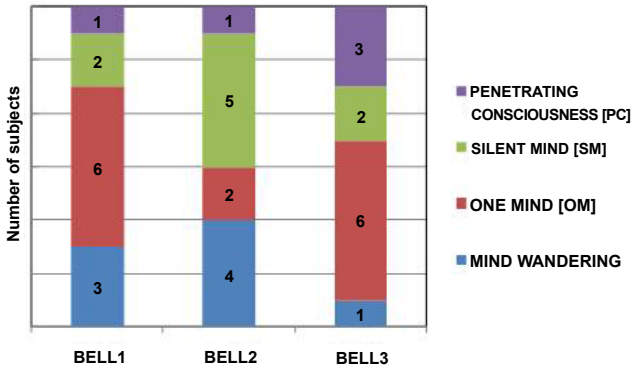


Figure 2: Distribution of states of consciousness in each of the three bells.

are statistically significant differences ($p<0.05$) between states; with increases in gamma power in the deepest states, in parietal-occipital areas - left (POL), right (POR) and medial (MPO). Figure 3 shows the increases in power changes (with respect to the baseline) in gamma power rated by subjects as penetrating consciousness (PC), which is observed as significantly different from the decreases recorded by the EEG in those subjects who reported being in the One Mind (OM) consciousness state.

It should be noted that these results are in line with recent research highlighting the role of activity in the gamma band in studies on meditation. The purpose of this article is not a more exhaustive review, but a few recent papers on the topics should be noted (128-131). Neuroscientific literature allows these EEG results to be interpreted in terms of psychological functioning: the greater posterior gamma activity indicates that the deepest states are accompanied by better and more integrated sensory perception. This explanation is consistent with the alteration in the "sense of boundaries" [10] of the subject's self, as well as in the sense of a greater capacity for receiving sensory information. In states like penetrating consciousness, one enters a non-dual state and the boundaries between subject and object disappear, which allows more reception than normally found within the subject's limits, like his own internal rumination, self-referential, entering the domain of "selflessness" [115,117,132] within a "process of self-transformation" [14,132].

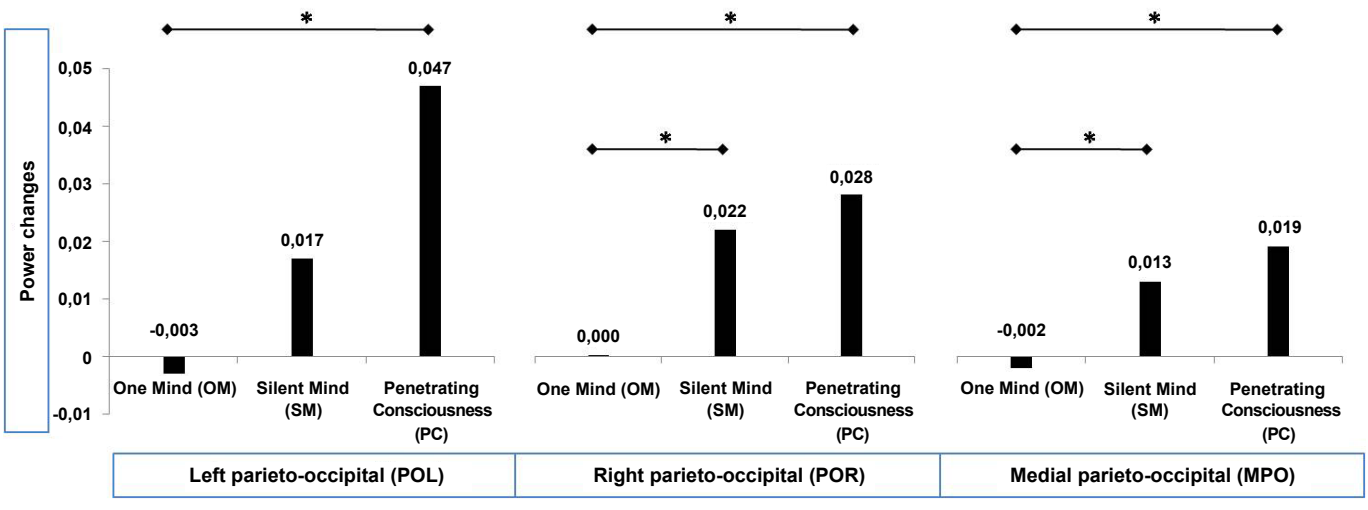
We believe that this preliminary evidence constitutes a solid foundation for further consolidating the study of the three states of consciousness proposed in this article. Future research could complete this analysis with longitudinal studies which jointly analyze the paths of change – the evolution – of (1) the states of consciousness attained during the meditative practice and (2) certain psychological trait-related variables that are interesting from the clinical point of view. As Figure 4 shows, we hypothesize that the evolution of the three states of consciousness during a meditation session (i.e., the intra-session evolution) follows non-linear dynamics.

It is our opinion that the study of how the changes in the perception of self that take place throughout the meditation sessions (meditative practice, first area in Figure 1) are impacting changes at the level of psychological functioning (clinical practice, second area) should be in the "roadmap" for future research (scientific research, third area). The complex world of states of consciousness, for which there is – rightly – an attempt to try to establish models, such as the consciousness state space model (CSS) [95] or the proposal [96] to consider them "patterns of phenomenal properties". The categorization of three states proposed in this article may be useful in experimental designs in which first/third person data are combined. Based on our experience [19,60] we suggest that the NLDS theories – which consider the human being to be an open and complex system "with dynamic boundaries" – can contribute significant synergies to research done based on other paradigms.

Conclusion

We believe it would be interesting to advance in research lines based on the synergistic combination of the three areas: meditative practice, clinical practice and scientific research. This is probably the only way we can get out of the mind labyrinth in which the Western world seems to become lost when it restricts the study of meditation to its boundaries. We believe that the experiences that occur in meditation should be studied from the understanding of human beings as complex, open systems with flexible boundaries, constantly changing. The proposal for the characterization of three states (OM, SM, PC) defended in this article is based on these premises, based on the understanding of the meditation practice from the framework of the theories of the NLDS. Our proposal is based on decades of meditative practice and clinical practice, and the first evidence of its empirical validation has already emerged.

We have stated that mindfulness may have started for the purpose of helping and enriching mental health and the science that studies it. But we also encounter opposition focused on the danger of mindfulness reducing the ancient practice of meditation to consumerism and marketing. There's a great distance between being self-conscious in the present without judgment, and states of non-duality to which we may not be able to travel based on a causal mentality whose method derives from the mechanics of using a particular skill for a particular purpose. Flow means being completely at the vertex of the present [95] and this is an unlikely partner to behavioral programming. Perhaps the field of contemplative neuroscience may open a door [5]. Applications



(*) statistically significant ($p<0.05$)

Figure 3: Differences between states in power changes (with respect to baseline) in gamma power.

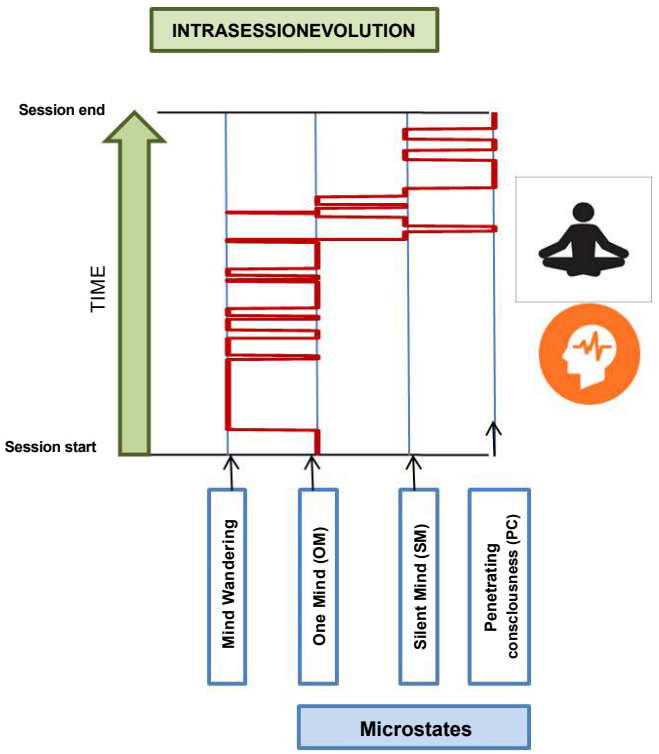


Figure 4: Evolution of the three states of consciousness during a meditation session.

like CSS – Consciousness State Space – propose a theoretical basis for the study of consciousness [95] and the explanation of consciousness [29], clinical application of methods in meditation [19,60]. It seems appropriate that the meditative and clinical practices and research expand in order to experience in first and third persons these new frontiers of knowledge. We shall have to cultivate patience [95]. We understand that all professionals involved in conscious health care aim to alleviate suffering by offering healing within a life purpose based on science, practice and service from the first/third persons. We understand that research will take time and will produce surprising findings.

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