



Moving beyond the concept of altered state of consciousness: The Non-Ordinary Mental Expressions (NOMEs)

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ABSTRACT

Aim of this paper is to review the state of the art of so-called altered states of consciousness, anomalous experiences, and exceptional human experiences, showing the need for reappraising the whole topic and gather them under one roof. The term Non-Ordinary Mental Expressions (NOMEs) and a new classification of non-pathological ostensibly odd phenomena is introduced, emphasizing their epistemological, transcultural and interdisciplinary implications with their huge implications in medical and psychotherapeutical clinical practice.

Keywords: consciousness; altered states of consciousness; non-ordinary mental expressions; anomalous experiences, exceptional experiences.

INTRODUCTION

Uncommon or exceptional, hardly explainable experiences and the encounter with the “Unknown” have intrigued and challenged peoples, philosophers, priests, artists and physicians since the prehistory in all cultures, engendering a profound influence in the Weltanschauung (view of the world), the cultural development, and spirituality of the whole humanity.

Altered state of consciousness (ASCs), anomalous experiences (AEs), and exceptional human experiences (EHes) are the more common terms used for describing such experiences in medicine and psychology. A huge overlapping between them exists, as well as some incongruences in their classifications; therefore, putting them under one roof is essential to avoid, a), the dispersion of same or similar experience in ostensibly different topics, b), allow for a better approach and the best compromise between simplicity and comprehensiveness. Putting them under the same roof would also favor a shared multidisciplinary approach merging their scientific, historical, anthropological and philosophical implications in a whole. At this time only

a first, provisional draft is possible, to be submitted to the consensus of the scientific community and to be implemented according to further discussion, study and evidences.

ASCs include a wide range of phenomena, which have been appraised first by Ludwig [1] in medicine and further analyzed by Tart (1976); later on, the concepts of AE and EHE have been introduced in psychology, the latter especially adopted in transpersonal psychology (Cardena, Lynn & Krippner [2,3]; White [4,5]. Their variety and heterogeneity at least partly depends on the adopted standpoint and the nouns used to indicate them, a fact that may add more confusion than clarity; therefore, it is worth shortly outlining them, discussing their main similarities, differences and limits, seeking for a more rational, coherent and pragmatically useful classification.

ABOUT ASCS

The concept of altered state of consciousness (ASC) has been introduced in medicine by Ludwig in 1966 in a review encompassing both physiological and pathological conditions with the aim to describe their common aspects and denominators, as well as the conditions necessary for their emergence. He wisely emphasized the risk of conceptual pitfalls in his general approach, as well as the conceivably artificial nature of any classification, concluding that:

“Many ASC serve as final common pathways for many different forms of human expression, both maladaptive and adaptive”.

Ludwig [1] defined ASCs as

“Any mental state(s) induced by various physiological, psychological, or pharmacological maneuvers or agents, which can be recognized subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience or psychological functioning from certain general norms for that individual during alert waking consciousness”.

His classification included five groups of causes or triggers (Table 1) and mentioned a wide range of possible ASCs without systematically framing them in a structured list.

Table 1: Classification of ASCs according Ludwig [1].

CAUSES

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|----|---|----|---|
| A. | Reduction | of | exteroceptive stimulation and/or motor activity |
| B. | Increase of exteroceptive stimulation and/or motor activity | | |
| C. | Increased alertness or mental involvement | | |
| D. | Decreased Alertness or Relaxation of critical faculties | | |
| E. | Presence of somatopsychological factors | | |

He held an open-minded approach ☐ contemplating a wide range of ASCs and looking for their possible commonalities, a fact also witnessed by taking LSD for experimental purposes in order

to check the effects on himself. Thus, his classification also included ancient healing mind/body procedures such as incubation, a healing technique steadily used in ancient Egyptian and Greek medicines for some three millennia [6], religious trance experiences, rites of passage, spirit possession, shamanic trances and those related to prophecies and oracles (e.g., Pythian priestesses), orgiastic and ecstatic trances, as well as experiences related to enlightenment (like Samādhi and Satori in Yoga and Zen Buddhism, respectively).

Later on, ASCs have been faced in medicine through a strictly neurophysiological and psychobiological perspective [7,8], while other authors have suggested the need for a revision of the very concept of ASC [9].

In 2005 the ASC Consortium, an European institution founded in 1998 with the aim to conceptualize and systematically explore ASCs in the context of neurosciences, has classified ASCs adopting empirical-descriptive criteria as a base to develop an ASC model [8]; however, to our knowledge, the ASC Consortium has not published anything since then. The authors have classified ASCs according to their origin ☐ i.e., spontaneous, induced, or pathological ☐ (see Table 2) and provided a short description of their main phenomenal features and possible neuro-correlates, drawing the following conclusions:

1. Spontaneous ASCs seem to be related to transient cortical activity and arousal changes and “vanish when the central arousal system returns to normal levels either by voluntary control, biological rhythms (sleep–wake cycles), or resuscitation”.
2. Physical and physiological factors have a huge impact on brain functions, leading to different experiences related to the surplus or deficit of energy to the brain.
3. The wealth of available data on psychological procedures of induction allows to develop new functional models of ASC changes of consciousness and cognition and experimental methods to test them.
4. Pathological processes yielding ASCs involve different ways of affecting brain function, which seem to be organized in hierarchical levels, given that the stream of consciousness depends on integrated and coherent neural processes. Their pathological changes also hold the concept of neurobiological modularity, the nature of which remains broadly unknown yet.
5. Brain activation seems to be an essential factor for both awareness and behavior. The former may range from a narrow, focused attention to a broadest extended form of contemplation of all things and from forgetting oneself to an intensified feeling of one’s unique being. Likewise, the sensory dynamics may range between two opposite poles, e.g., from anesthesia to hypersensitivity, and may yield perceptions unrelated to appropriate physical stimuli.

Table 2: Classification of ASCs according to the ASC Consortium [8]

Origin	ASC
Spontaneous	Drowsiness Daydreaming Hypnagogic states Sleep Dreaming Near-death experiences
Environmental factors	Extreme environmental conditions
Physiological factors	Starvation Sexual activity and orgasm Respiratory maneuvers Fasting
Psychological factors	Sensory deprivation or overload Rhythm-induced trance (e.g., shamanic drum, twirling Dervishes) Relaxation Meditation Hypnosis Biofeedback
Neurological or psychiatric diseases	Psychosis Coma Vegetative State Epilepsy

Likewise Ludwig [1], Vaitl et al. [8] gathered pathological and non-pathological ASCs in a whole. However, their list of ASCs was largely incomplete. For example, the author did not include the ASCs induced by psychotropic drugs, while the list of those caused by brain injuries was largely incomplete (the reader can find a detailed analysis of them in the seminal work by Plum and Posner [10] stupor and coma, as well as the intriguing syndromes described in neuropsychology). In our opinion, the most relevant authors' conclusion is the acknowledgement that most ASC features may be detected only from a first person perspective (1PP) i.e., from subjects' narration of their experience. This implicitly acknowledges the limits of the objectivist-reductionist stance prevailed in medical science in last century when approaching subjective phenomena; on the other hand, the analysis and conclusions of Vaitl et al. [8] remain solidly based on such a perspective, emphasizing their mechanistic aspects while skipping their meanings and their broad cultural values.

The same goes for the article by Boveroux et al. [7], where the authors took into account only a limited number of ASCs (sleep, general anesthesia, coma and vegetative state) from a strictly neurobiological reductionist perspective. Again, the mentioned ASCs were classified according to their origin and were conceived as physiologically, pharmacologically, and pathologically altered conscious states, marked by regional and/or global changes of brain metabolism. Their analysis, despite useful in the assessment of some brain mechanisms associated to different ASCs, is far from providing an appropriate outline of their huge variety and meaning. Later on, the traditional concept of ASC has been questioned [9], emphasizing the fact that an ASC does not depend on a plain alteration of perception or consciousness per se; rather, it is marked by changes of the informational or representational relationships between consciousness and the world, viz., a matter of misinterpretation. If this is the case, they entail a twofold implication: a) ASCs cannot be properly understood through the prism of a narrow reductionist perspective missing their meaning and cultural implications; b) they are endowed with deep epistemological implications, i.e., their dependence on the adopted Weltanschauung. Interestingly, Revuonso et al. [9] emphasized that, unlike Ludwig definition, one may not be aware of one's own ASC.

As a whole, the available articles hold the view of ASCs as a heterogeneous mix of physiological and pathological phenomena; this is not wrong in itself, since it may help envisaging common phenomenal and neuropsychological traits. On the other hand, gathering them in a whole may inadvertently lead one to consider all ASCs as an expression of a less-than-normal condition with respect to ordinary consciousness, a fact depending on the ostensible oddity of most of them, in turn depending on the Zeitgeist (spirit of times) and adopted Weltanschauung. Here, it is worth reporting the wise Plato's thought, well defining the differential diagnosis of non-pathological and pathological conditions (Phaedrus, 265a):

"[Socrates] And of madness there were two kinds; one produced by human infirmity, the other was a divine release of the soul from the yoke of custom and convention".

The inclusion of sleep and dream in the list of ASCs discloses the deceptive perspective of naïve empirical approach based on common sense (regarding wakefulness as superior to sleep) and inclined to substantialize differences appearing to the ordinary consciousness. Indeed, the break in continuity of wakefulness and sleep seems meaningless, since we spend about one third of our life sleeping and incessantly shift between different levels of arousal, awareness, sleep and dream. This unceasing rhythm makes them an inseparable, functional, dynamic whole, where a non-stop exchange of information between consciousness and the unconscious occurs. Actually, sleep is essential for life and a healthy consciousness, where wakefulness-sleep cycle is embedded in the chronobiologic regulation and the natural rhythm of night and day: as a result, dealing with sleep as an ASC, looks like considering the night as a preposterous altered state of the day.

ABOUT AES AND EHES

Rhea White introduced the concept of EHE in the 1990s' [4,5], now defined as follows:

"Umbrella term to cover those EHEs for which experiencers have been able to potentiate their sensed but hidden meaning, consciously realizing it, sometimes after long work and hard effort, not without risks. Usually this realization results in a transformed identity, lifeview, lifeway,

and/or worldview of the experiencer...The changes are in the direction of realizing/actualizing the experiencer's full human potential" (<http://www.ehe.org/display/ehe-page5ced.html?ID=4>).

EHEs include a huge amount of experiences, classified in five categories (see Table 3) over 100 in the classification by Palmer & Hastings (2013), most of which traditionally belonging to the field of parapsychology.

Table 3: Classification of anomalous and exceptional experiences

Anomalous Experiences [11]	Exceptional Experiences [12]
Synesthesias	Mystical/Unitive experiences
Hallucinatory experiences	Psychich/paranormal experiences
Lucid dreaming	Encounter type experiences
Near-death experiences	Unusual death-related experiences
Mystical experiences	Exceptional normal experiences
Previous lives memories	
Anomalous self and identity experiences	
Alien abduction experiences	
Psi-related experiences	
Anomalous healing experiences	

Palmer and Hastings [12] also deemed it worth distinguishing EHEs from other ASCs and non-ordinary states of consciousness, claiming that, despite being related to each other, EHEs may occur also during ordinary consciousness, while ASCs not necessarily engender EHEs. Nevertheless, the classification of EHEs, despite useful on descriptive standpoint and to show the wide range of possible unusual non-pathological experiences, seems dispersive and not clearly coherent, for several reasons:

1. There is a huge overlapping between different classes of experiences, making their classification inconsistent; for example, most of those belonging to the encounter-type experiences (e.g., ancestors, angel encounter, apparition, demonic or divine encounter) also belong to, or may be a part of mystical/unitive experiences; the latter also include revelation and experiences triggered by psychotropic plants or anesthetic agents. Encounter-type experiences in turn include several experiences of paranormal tonality (e.g., ghost, possession and poltergeist), while death-related experiences partly overlap with mystical and paranormal ones.
2. According to the Oxford Dictionary, the term exceptional means unusual [13], a real fact for many listed EHEs. As a result, the concept of exceptional normal experiences may look like a sort of oxymoron or, anyway, an ill-defined concept. In fact, it includes items which can hardly be considered "exceptional", such as aesthetic experiences, dream, nostalgia, orgasm, limerence and falling in love. At least part of them, like dream (be it remembered or not), are probably among the most common experiences of humankind. For the same reason, it is not clear why tears of performing/witnessing noble acts, "wonder joy" and thrills/goose-flesh/tingling should be considered as exceptional; rather, they are not exceptional in themselves, but become so when outstandingly strong and able to trigger their transformational potential.

3. Some exceptional-normal EHEs, such as creativity and empathy, are mind faculties rather than experiences, despite engendering them as a product.
4. Coma experiences (included in normal-exceptional experiences) by definition occur in severe pathological conditions, i.e., far from being “normal”, or are likely to belong to near-death experiences (NDEs) and out-of-body experiences (OBEs), classified in the group of unusual death-related experiences.
5. Intuition, included in the group of psychic/paranormal experiences, is an absolutely normal mental faculty unless it shows hidden truths, a fact ranging from scientific discoveries (e.g., Einstein’s intuition of the relativity of time) to events endowed with paranormal flavor ☒ e.g., witnessed facts that neither seem plausible nor have been explained by scientific knowledge so far (e.g., witnessed NDEs, extrasensory perception, forecasting future events). Intuition is a still ill-known normal faculty of human mind, involving unconscious thinking as well as creativity [14,15,16,17]. It is also related to wisdom, an interesting neuropsychological model of which is available [18]. Both of them may engender fast, unconscious information processing, leading to proper understanding and solution of complex problems being attained in an ostensibly non-rational way. It is widely used in clinical diagnosis and decision making in complex and elusive conditions [19,20]. Intuition may be especially used in emergency, where there is no time enough for analysis and one must make very quick diagnostic and therapeutic decision a fact generally considered as the product and virtue of a great clinical experience but involving a good use of both intuition and wisdom. Thus, intuition, considered in the past as a pre-logic activity, belongs to the world of intelligence, a complex faculty involving reason, memory, motivation, pattern recognition and capacity to take into due account subliminal but relevant perceptions in a mix of conscious and unconscious activities. It is akin to the Greek concept of *noûs*, defined as immediate vision and comprehension, a process underpinned by a fast, unconscious processing of available data, neuropsychologically well analyzed by Goldberg [18].

Cardena, Lynn J., & Krippner [3,11] have introduced the concept of AE, in order to describe some uncommon, spontaneous experiences differing from the so-called normal ones. AEs have been separated from ASCs in that they are non-pathological experiences (such as synesthesias) that do not necessarily imply ASCs, despite a partial overlapping may exist (Table 3).

Hypnosis and meditation have been included in the classification of ASCs but neither in AEs’ nor in EHEs’ classifications by Palmer & Hastings [12] for two reasons: a) they are intentional procedures, rather than spontaneously occurring experiences; a) they may or may not yield unusual experiences. At any rate, one can have deep experiences sharing common features with some AEs and EHEs during both hypnosis and meditation.

THE NEED FOR A COMPREHENSIVE APPROACH, RENAMING AND CLASSIFICATION

If the above discussion is correct, it is worth shortly analyzing the meaning of the terms ASC, AE and EHE to check which, if any, is more appropriate to indicate them. As previously reported [21], the term “altered” is ambiguous, since it may mean either modified, different, or even disordered, while in domestic animals it may mean castrated or spayed. As a result, the term “altered”, despite not meaning abnormal or pathological in itself, hints to a less-than-normal condition, especially when ostensibly odd phenomena are dealt with; this may engender

misunderstandings, especially when both pathological and non-pathological experiences and mind activities are merged in the same group and their meaning is not taken into account.

As far as the concept of state is concerned, it is a widely used term in science and, generally speaking, it is not wrong. Nevertheless, it is an abstract concept tinged with naïve realism, an inclination reflecting the need of the Ego to create stable images of the world in order to orient oneself and manage the reality. Actually, the concept of state defines an observed condition where the variables taken into account do not change during the observation while skipping all the rest; it is pragmatically useful, but it remains a static, conventional abstraction in the “world of becoming”, as Plato defined the physical reality. This is especially true for consciousness, marked by a ceaseless mind and brain activity and flow of experience. Interestingly, both, Heraclitus in the West and Taoism in the East have wisely established the dynamic nature of reality, emphasizing that the only constant of the universe is its unceasing transformation. Indeed, consciousness mysteriously emerges from a ceaseless flux of information and processing, making the concept of state of consciousness an illusory cultural by-product of Western thought, the static approach of which is strongly inclined to ontologization and substantialization of observed phenomena. This has also made the definition of identity – i.e., its permanence in a ceaseless one’s body and mind transformation over the course of life – an unsolved philosophical conundrum, since the paradox of Theseus’ ship in ancient Greece [22]. It is worth mentioning that in Indian culture consciousness is not meant as a “thing” but a non-reified, unceasing, intrinsically dynamic functional process: accordingly, its Sanskrit names are *vṛtti* and *cittavṛtti* (mind activity and wave-vortex of mind activity, respectively).

The criticism to the ASC concept has also involved hypnosis, giving rise to a huge debate in the past years, i.e., whether hypnosis can be considered as an ASC, at least in its deeper stages [23,24,25,26]. According to Kirsch [24], the problem has been ill put in the past, having been mainly approached supposing the existence of a hypnotic state yielding the hypnotic experience; as he emphasized, “the altered state issue can be conceived as fuzzy points on a continuum” where the state is a noun, an untestable and scientifically meaningless condition rather than a real state. A standpoint justifying the hypothesis of hypnosis as a state was the claimed condition of hypersuggestibility, an old wake and questionable issue to be reexamined. Actually, it can be better conceived as a matter of subject’s hypnotic ability to convert suggestions into plastic monoideism, a fact favored by absorption and motivation rather than caused by an ill-defined and, probably inconsistent, concept of suggestibility [27, 28].

The term anomalous looks more appropriate than altered and, in the intention of authors [11], it only refers to AEs being uncommon, deviating from what is standard and conventionally accepted without implying any dysfunction. On the other hand, some authors have argued that even the term anomalous is not satisfactory, since it may lead to them being perceived as non-normal or natural, as a fluke of functioning at best and, thus, being devaluated [12].

As far as the term exceptional is concerned, it does not seem to be the case of several EHEs, while the term experience seems to us inappropriate for two main reasons. First, some relevant ASCs, like hypnosis and meditation, are not a matter of experience only; rather they are intentional and complex well-structured procedures, endowed with a wide range of mental processes and tasks, yielding a full range of experiences and changes of mind and body regulation. In other words,

they are neither a simple matter of experience (which, rather, is their product) nor are they uncommon, since may be intentionally potentially learned and used by most people. Indeed, they cannot be missed in a classification of non-ordinary, non-pathological mind activities and experiences. Furthermore, the concept of experience, despite essential in this context, is not enough to comply with the very EHEs' definition reported above. In fact, it highlights the need for understanding and realizing their hidden meaning "sometimes after long work and hard effort... in in the direction of realizing/actualizing the experienter's full human potential". This clearly means that what plays a key role is not the experience in itself but its impact on mind and mental processes related to its interpretation and self-transformation. This is a topic of paramount importance in both philosophy, psychology, and psychotherapy with a thousand-year old tradition in meditation and spirituality as well as for the enlargement and full realization of Self [22]. Of course, the experience may play a crucial role as a trigger, but it means nothing in itself, unless the proper interpretation and the process of self-transformation have been started; on the other hand, some of them may also cause unease and disorders (like anxiety, PTSD, or delatentization of psychoses), when improperly interpreted. An outstanding physiological example is William James's experience with nitrous oxide, leading to a transient experience of "metaphysical illumination", followed by a sad condition of "ultimate nothingness" and "meaningless infinity", a fact clearly showing that drugs in themselves lead nowhere unless a spiritual, ritually well controlled journey is performed by a mind ready to travel it and reach the proper destination [22,29,30].

The above-mentioned facts strongly suggest the need to reappraise the whole topic encompassing both terminological issues and the content of experiences, in order to gather all main non-ordinary-anomalous-exceptional states-experiences-procedures and put them under one roof with a semantically well devised name. This would be essential to prevent avoidable sources of confusion, misunderstanding and prejudicial neglect. It might also favor a better multidisciplinary approach, able to merge psychological, neurophysiological, anthropological and philosophical issues in a whole as well as check the still ill-known relationship between most of them. Excluding pathological conditions may also help simplifying a comprehensive classification and avoiding the risk to inadvertently equate them to neurological or psychiatric disorders.

FROM ASCS TO NOMES

In his seminal work, Ludwig [1] correctly gathered physiological and pathological ASCs, given his aim to encompass their meaning and possible common aspects. His definition of ASCs as "sufficient deviation from certain general norms for that individual during alert waking consciousness" is pragmatically reasonable as a first step, but remains uncertain and the author, who was aware of this, emphasized possible conceptual pitfalls of ASC definition.

Actually, the concept of normal consciousness and its boundaries is not definable or ill-definable at best, making the very concept of "altered state" misleading; when dealing with non-pathological conditions it mainly reflects the deviation from the adopted Weltanschauung. It is a relevant problem common to psychiatric diagnosis, where false positive diagnoses ☐ mistakenly classifying normal intense reactions to stress as mental disorders ☐ is still a major challenge to the validity of psychiatric diagnosis [31, 32]. In other words, there are no clear-cut limits between normal and disordered behaviors, making any strictly dichotomous classification questionable;

rather, a wide grey area exists in between, where ostensibly odd, non-pathological experiences call for being properly understood, rather than being a priori psychiatrized, as discussed elsewhere with regard to dissociative identity disorders [33]. This is a universal problem stemming from the limits of any adopted definition, a fact endowed with huge epistemological and metaphysical implications; indeed, the development of human knowledge and science is marked by divergent, ostensibly odd ideas mistakenly taken for fancies but later proving to be true and yielding a change of paradigm accordingly, as well analysed by Kuhn [34].

To summarize, the concept of ASC is weak, if not ill-founded. The mix of pathological and non-pathological conditions engenders the risk of lumping everything in one, inadvertently mistaking all of them as abnormal, or anyway less-than-normal conditions, especially when the approach is limited to a mechanist-reductionist perspective skipping their psychological and philosophical meaning. Given the limits and pitfalls of the above discussed terms, we believe that the name Non-Ordinary Mental Expressions (NOMEs) previously introduced when dealing with NDEs, mystic experiences and experiences of other identities [35,36,37] may be an appropriate all-encompassing term to gather all non-pathological ASCs, AEs and EHEs and mental procedures yielding them. The term non-ordinary avoids tiling them to any hint of dysfunction; rather, it emphasizes the epistemological and metaphysical implications of their ostensible oddity – their deviation from what is ordinary, i.e., conventionally accepted on the base of Zeitgeist and Weltanschauung adopted at any given time. According to the Oxford Dictionary, the term expression means the action of expressing something, an emotion or an idea; therefore, it seems more appropriate than experience or state, while the term “mental expression” better fits the need to establish the role of mind and its processes, in the absence of which the experience alone may be meaningless or even source of disorders. From now on we will use the acronym NOMEs in this article.

A wiser approach to NOMEs should follow the definition of consciousness by William James:

“It is that our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus, and at a touch they are there in all their completeness, definite types of mentality which probably somewhere have their field of application and adaptation. No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded” [29, p. 111].

Table 4 and Figure 1 show a first, tentative synopsis of the varieties of NOMEs and the main conditions able to favor or induce them, trying to encompass all main AEs, EHEs and non-pathological ASCs in a whole, while getting the best compromise between thoroughness and conciseness; of course, each item indicates a kind of NOME that may include a variety of similar expressions to be implemented according to further evidence in order to encompass the whole range of expressions.

Table 4: Non-Ordinary Mental Expressions

- 1) Alien abduction experiences**
 - 2) Experience of other identities**
 - 3) Hallucinations and visions:**
 - a) Spontaneous
 - b) Eidetic imagination
 - c) Hypnagogic & hypnopompic hallucinations
 - d) Use of Hallucinogens and other psychotropic agents
 - 4) Extrasensorial perception**
 - a) Clairvoyance
 - b) Precognition, premonition
 - c) Retrocognition
 - d) Telepathy
 - 5) Higher-order mental expressions, including:**
 - a) Enlightenment (in Eastern & Weastern traditions)
 - b) *Epoitéia*, according to Aristotle (*Eudemus*, fr. 10)
 - c) Sageness and Wisdom
 - d) Self enlargement [38] quoted by Facco, Al Khafaji, et al. [22]
 - e) Self expansion beyond ordinary states, according to Arieti [39]
 - f) Spiritual Self, according to James [29]
 - g) Superconscious states, according to Assagioli [40]
 - 6) Hypnosis**
 - 7) Lucid dreaming**
 - 8) Meditation**
 - 9) Mystical experiences:**
 - a) Apophatic
 - b) Cataphatic
 - 10) NDE, NDE-like and End-of Life experiences**
 - 11) OBE**
 - 12) Past lives' memories**
 - 13) Psychokinesis:**
 - a) Macropsychokinesis (anomalous force)
 - b) Micropsychokinesis (anomalous perturbation)
 - 14) Synchronicity**
 - 15) Synesthesia**
 - 16) Stigmata**
 - 17) Trance**
 - 19) Unexplained healing**
 - 20) Xenoglossy**
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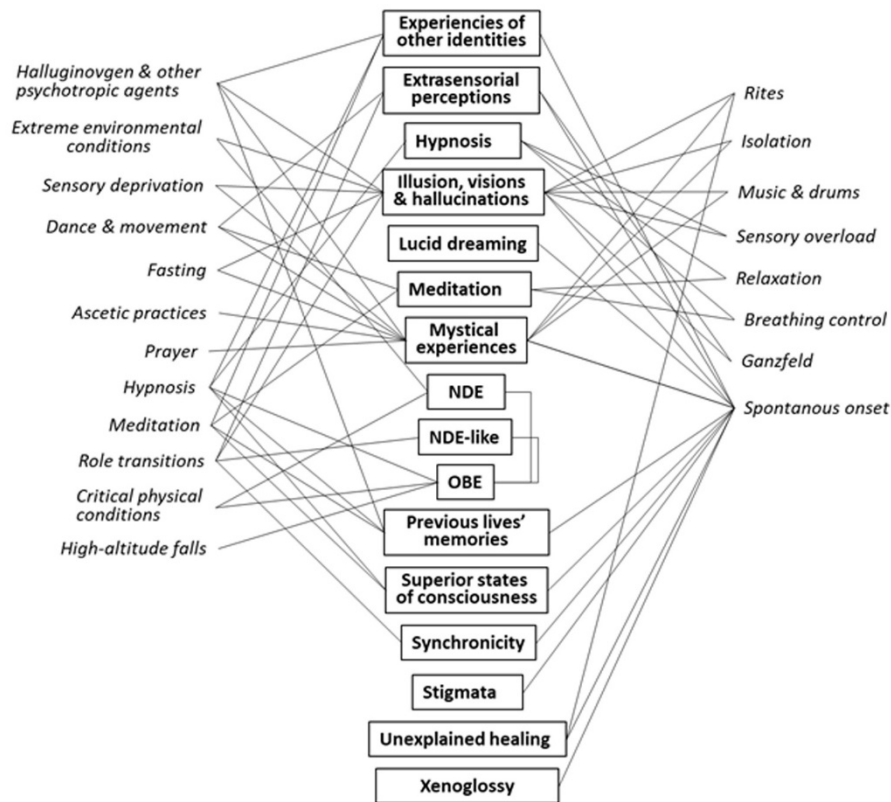


Figure 1: NOMEs and their main possible triggers and conditions (in Italics) during which they may occur.

They have been listed in alphabetic order, for we refrained from classifying them on the base of their hypothesized nature or possible triggers in order to avoid any a priori constraint and meet the fact that most of them may belong to more than one single category or may share common triggers. For example, mystic experiences may be cataphatic or apophatic [37, 41] the former including visions belonging to specific denominations, the latter being marked by the absence of any image and, as such, independent from any specific belief and theology. Therefore, apophatic experiences share common elements with the tabula rasa of Meister Eckhart in Christian mystic tradition, the state of *turiya* in Veda, *nirodha* in Patañjali Yoga-Sūtra and no-mind doctrine in Zen Buddhism and also include the meditation techniques allowing to reach this states [43,43]. Equally, they may share some common aspects with NDEs, OBEs [the first of which in Christendom has been described by St. Paul in the Second Letter to the Corinthians [44, pp. 142-145], and hallucinations. These last have been in turn considered as psychiatric phenomena until the latter 20th century, but non-intrusive hallucinations may be experienced in up to 15% of non-clinical population [45]. Likewise, hypnosis and meditation share several historical, procedural and neuropsychological common aspects and both of them may give raise both apophatic and cataphatic-like experiences – viz., experiences of transcendent tonality associated to thriving imagination – while OBEs may be easily induced in highly hypnotizable subjects [46, 2, 43, 47].

Hypnosis and meditation have been included in Figure 1 both as NOMEs and procedures of induction, according to previous reports [48, 49]. The term *trance* has been also included in the list of NOMEs only to mention a traditional term related to ASCs; as a matter of facts, it is a

generic, ambiguous, ill-defined term that may be assigned to most NOMEs and will hopefully be withdrawn in the future.

Both ASCs, in article by Ludwig [1], and EHEs include experiences characterized by the feeling of a better-than-normal awareness and/or spirituality. They have been named with a variety of terms in the past, such as peak experiences, transpersonal, transcendental or preternatural experiences, or wondrous events all nouns chosen according to the context, personal beliefs and interpretation of the authors reporting them ☐ while they are not mentioned in AE and the psychobiological ASC classification by Vaitl et al. [8]. As a whole, they reflect outstanding but still ill-known properties of human mind that have permeated the whole history of human kind in all cultures and, as such, they cannot be neglected in the classification of NOMEs. Perhaps, the previous classification by the ASC Consortium has neglected them due to the traditional inclination of medicine to seek for less-than-normal or pathologic phenomena through an objectivist perspective, while the ruling materialist perspective of science has been inclined to refuse a priori what looks to be “immaterial”, especially when entailing a transcendent or preternatural whiff.

We propose to label the whole of these seemingly “superior” states of consciousness as higher-order mental expressions, in that they are related to a feeling of enhanced awareness up to enlightenment and the contemplation of the world as an undivided Unity one belongs to. They are a topic of paramount importance in the comprehension of the physiology of mind and the nature of Self, with its metacognitive potential. According to Jung, its full realization may allow for individuation, a process of emancipation along the axis Ego-Self that may be better envisaged as a dynamic development of the Ego-I-Self continuum in the flow of life experience [22]. It involves metacognition and the overcoming of naïve realism leading to reality being better understood, a fact well established by the thousand-year old concept of *Māyā*, the mask of illusion of ordinary consciousness in Eastern philosophy; in Western tradition, a similar concept has been symbolically well defined as the original sin (Genesis, 3) [44, pp. 287-291] and as full development of mind on the way of wisdom, sagesness and enlightenment in Western philosophy: skipping higher-order mental expressions and their relationship with the Self from a narrow materialist stance would be tantamount to a mutilation of human mind.

Finally, we have included in the list of NOMEs some Psi phenomena already listed in the EHEs. Psi phenomena are traditionally considered a matter of parapsychology and usually discarded by mainstream science due to their ostensible oddity. On the other hand, facts are never parapsychological in themselves: they may only be true or false. If this is the case, science has the duty to falsify them and, should they be proved to be false, they should be simply discarded forever. If shown to be true, they should be included in the accepted knowledge; should this be the case, it would imply an updating of the known laws of nature. In other words, a rigorous scientific study of these phenomena pertains to science, while neglecting and relegating them to parapsychology is a matter of prejudice.

The psi phenomena included in the list of NOMEs have been classified into two groups according to Cardeña [50] (2018) as extrasensorial perceptions (ESP) and psychokinesis (PK), which have already been investigated by several rigorous studies. In fact, the mentioned article by Cardeña summarizes the results of 11 meta-analyses of studies on ESP and PK for a total of over 1,600

subjects, supporting the possibility to check these phenomena and prove or disprove them and, thus, disclose the possible reality of at least part of them.

CONCLUSIONS AND PSYCHOTHERAPEUTIC IMPLICATIONS

NOMEs are intriguing products of human mind narrated since time immemorial and have accompanied the cultural and spiritual development of the humankind in both the East and the West. They are endowed with huge epistemological and metaphysical issues – the same involved in the foundation of the science of consciousness, the discussion of which is beyond the aim of this article. In short, modern sciences were born as a political compromise with the Church claiming the exclusive competence on the soul, a solution favored by the Cartesian radical dualism. This led to consciousness and subjectivity being increasingly disregarded on a priori basis and a materialist perspective being adopted – at any rate, a metaphysical axiomatic stance.

According to Jaynes, consciousness is diachronic, i.e., cannot be properly comprehended outside history and cultural contexts. If this is the case, what may be considered a normal property or a NOME closely depends on adopted *Weltanschauung* and *Zeitgeist* at any given time. Tart wisely considered ordinary consciousness a semi-arbitrary construction resulting from automatized habits of thinking, feeling, perceiving and acting, where the process of automatization leads to the cultural relativity and arbitrariness of much of it being skipped. For example, what might be deemed normal in ancient time, as well as now in other cultures (e.g., visions or premonitory dreams), has been considered as ASC or hallucination by modern Western culture, a conventional fact depending on the adopted paradigm; therefore, an epistemologically sound study of NOMEs calls for adopting a transcultural interdisciplinary approach. Of course, reductionism is not in discussion here; actually, it is a valuable and powerful method to investigate the constituent parts of phenomena and their interactions, but it was born to investigate the physical reality only. When consciousness and NOMEs are concerned, it allows for a valuable knowledge of their neurocorrelates, but it is blind to the world of their meanings: actually, no trace of consciousness remains once the process of reduction is completed.

We believe that gathering NOMEs under the same roof with a single name and a common language may greatly help improving their identification, knowledge, communication, and interdisciplinary sharing. The topic has huge implications in clinical practice too. In fact, NOMEs are more frequent than commonly believed, despite their ostensible oddity and prejudicial refusal has led to them being neglected or even derided in the past, while most subjects experiencing NOMEs have refrained from reporting them due to the fear of being thought mad. This has in turn led to underestimate their prevalence, consider them as unworthy uncommon experiences and bury them in the oblivion. Instead, NDEs have an incidence ranging between 5 and 20% of patient undergoing cardiac arrest [51, 52, 53], while OBEs may occur in up to 26% of nonclinical population [54]. Furthermore, most people with NOMEs need to share them in the process of their proper integration by a sound knowledge improving their balance, a fact calling for an open, not-judging caregiver's mind, a full respect of patients' experience and narration, and the capacity to help him/her. Thus, NOMEs are a relevant topic in medicine and psychology, given the need to properly face the existential and philosophical problems they raise, i.e., the nature of human mind – including consciousness-unconsciousness and mind-body-world relationship and the meaning of life-death in the geometry of space-time.

Finally, the terminological issue is not a plain matter of drafting only. Names, besides being verbal signs, belong to the grammatical category of substantives – the etymology of which means indicating or providing substance – a fact reflecting the Western inclination to substantialize and ontologize any phenomenon.

When NOMEs are concerned it is worth emphasizing that the old term ASC does not properly fit their nature, while AEs and EHEs have been only recently introduced and, as a whole, they do not cover the whole topic (e.g., they do not include hypnosis and meditation). Thus, we believe that adopting a new more apt name and interpretation would be possible and welcome, in order to better define the topic and help the clinicians to reinterpret these mental expressions not only as psychopathological symptoms, but as expressions of the richness of human mind.

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