Understanding Non-Ordinary Mental Expressions and their Capabilities

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By

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List of Abbreviations

1PP:	First Person Perspective
2PP:	Second Person Perspective33
3PP:	Third Person Perspective
AE:	Anomalous Experiences
ASC:	Altered States of Consciousness
CEN:	Central Executive Control
CPR:	Cardiopulmonary Resuscitation
DBV:	Deth-Bed Vision
DMT:	N,N-dimethyltryptamine
EHE	Exceptional Human Experiences
ELE:	End-of-Life Experiences
ESP:	Extrasensory Perceptions
FA:	Focused Attention
MDMA:	3,4-methylenedioxymethamphetamine
ME:	Mystical Experiences
NCC:	Neurocorrelates of Consciousness
NDE:	Near-Death Experience
NDLE:	Near-Death Like Experience
NTTW:	Neurophenomenological Theory of the Three Worlds
OBE:	Out-of-Body Experiences
OM:	Open Monitoring
PTSD:	Post-traumatic stress disorder
SN:	Salience Network
TPJ:	Temporo-Parietal Junction
5-HT:	Five-Hydroxy-Triptamine

CHAPTER 1

WHAT IS CONSCIOUSNESS?

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 strong influence in the *Weltanschauung* (world view), cultural development, and spirituality of the whole humanity.

Non-Ordinary mental expressions (NOMEs)—a term gathering non-pathological ostensibly odd experiences, introduced to move beyond the questionable concept of altered states of consciousness (ASCs; the topic will be discussed in detail in chap. 3) – have been neglected by mainstream medicine or considered as psychiatric disorders in the past century due to their ostensible halo of abnormality. On the other hand, their oddity mainly depends on their deviation from the adopted *Weltbild* (picture of the world)[1] rather than dysfunction, a fact anyway leading to disregard them a priori without proper understanding. Therefore, the topic is endowed with huge metaphysical and epistemological issues, due to two main reasons:

1. Knowledge closely depends on the accepted axioms and theories, where one can only check and understand what is compatible with the adopted paradigm and *Weltbild*;
2. NOMEs are subjective experiences, embedded in the unbreakable dynamic relationship between the inner (including the unconscious) and the outer world.

[1] The term *Weltbild* has been introduced by Max Weber in sociology and defines the whole of cognitive-interpretative framework and related filters in the understanding of the outer world. According to Heidegger, the *Weltbild* mainly regards Science (e.g., mechanistic *Weltbild*) while the term *Weltanschauung* has a wider meaning, including both scientific and non-scientific views. The former is the result of a theoretical view of the outer world, akin to Popper's concept of objective knowledge; the latter is a more general view of life defining our perspective and horizon in the perception-knowledge of world and how we should act (Inwood 2011; Vassalle 2012).

Being NOMEs subjective in nature, the prevailing materialist-reductionist approach of medicine is not enough to properly understand them. Actually, modern science was born in the 17th century as the result of complex metaphysical and religious-political circumstances, leading to science being limited to the exploration of the physical world only. Therefore, its paradigm was born to investigate the Cartesian *res extensa* and not to deal with the *res cogitans*.

Indeed, the soul was investigated by medicine until 19th century (Dolan 2007; Cassano 1996), but only in the attempt to localize it in the brain or the body, not to understand its physiology and pathophysiology; much less to manage its suffering, considered an exclusive duty of the Church. The site of the soul was debated between the cardiocentric and cephalocentric theories since the antiquity. The idea that cerebral ventricles were the site of the soul dates back to Herophilus (3rd century BCE), while Galen (126-219 CE) believed that the spirit of life—the vital *pneuma*—was in the heart and then spread to the brain where it gave rise to the mind. Until the 18th century—when the cerebrospinal fluid was discovered by Domenico Cotugno, physician at the *Ospedale degli Incurabili* in Naples—the main theory in Western medicine regarded the ventricles as the site of the soul, a fact suggested by dissections in decapitated corpses (Longatti 2008). In fact, decapitation yielded the outflow of the cerebrospinal fluid from ventricles and subarachnoid space; the resulting enigmatic presence of empty but wet cavities in the brain led to hypothesize them as the site of *aer* or *pneuma*, viz. the soul[2].

Descartes hypothesized that the soul abided in the pineal gland, probably due to its anatomic proximity with the third ventricle and the aqueduct of Sylvius [the pineal gland was not well-defined until Vesalius' studies in 16th century and was mixed up with the cerebellar vermis and choroid plexus (Lokhorst and Kaitaro 2001)]. Descartes shifted the site of the soul from ventricles to brain tissue in the attempt to bring the soul (consciousness) and

[2] The concept of ἀήρ (*aer*, air) was introduced in medicine by Hippocrates. He thought that the brain was the effector (a sort of processor, to use the modern informatic term) enabling one to understand inputs coming from outer world emanated by the *pneuma* (breath of life) that governs all things. *Pneuma* in Hippocratic medicine is in the physical world, while the *flatus* is in the body and is endowed with thought and closely related to the soul (ψυχή, *psiché,* vital blow). Today one might interpret *aer* as the information reaching the sense organs, an event occurring in the form of waves (at least for visual and acoustic perception), while the internal *flatus* is different and distinguishable from the *aer*, in that it is the is the product of the transduction of stimuli by sense organs and brain: it is therefore always pneuma, but in a different form, the one coded by man and that belongs to the mind life.

the body together, an undeniable physiological fact though made problematic by his radical dualism.

At any rate, the metaphysical and political circumstances at the origin of Galilean Sciences led to consciousness being neglected by medicine, modern psychology being founded only at the end of 19th century, and the science of consciousness being introduced only in the 1970s. In this regard it is worth mentioning that American Behaviorism in the 1920s considered consciousness as a topic of no interest in psychology (Ferrari, Robinson, and Yasnitsky 2010).

NOMEs, though ostensibly odd, are an essential part of the physiology of consciousness and human life; therefore, their proper approach entails the same philosophical issues raised by the science of consciousness, a problem common to other subjective phenomena including pain. The example of pain is exemplary, since it is a universal phenomenon—in this regard, it may be considered as the most "ordinary" symptom—certainly well-known by all people from direct experience, apart from rare cases of congenital anesthesia. Therefore, one may expect that it is easily understandable, but it has been one of the least understood phenomena in medicine (Facco 2021c). The reason is that pain is a subjective phenomenon, a matter of experience; as such, it cannot be reduced to nociception only, the only component approachable by the mechanistic approach.

As mentioned above, the huge philosophical implications entailed in the study of consciousness and NOMEs involve the epistemological and metaphysical assumptions at the base of reasoning and the adopted perspective, from which their comprehension closely depends. Therefore, their analysis is of paramount importance, *a conditio sine qua non* to check and hopefully withdraw any sort of prejudice (including scientific ones) in the study of subjective phenomena.

A correct analysis of NOMEs must follow the wise approach of 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" (James, 1917, 111).

The reflections on the nature of consciousness date back to the beginning of philosophy in both the East and the West. Its definition has largely

overlapped with the concepts of ego, me, soul and self with inescapable psychological, philosophical, anthropological and religious implications. As a result, the term consciousness is endowed with a wide range of meanings, like most terms relating to subjective phenomena; therefore, it remains an ill-defined and rather elastic concept, a fact also making it ambiguous, despite consciousness instinctively seeming to be a clear and familiar idea. As emphasized by Young et al. (2021),

> "Surveying the landscape of what we have come to learn about consciousness, it becomes clear that it is not a unitary state but rather a cluster concept that includes a number of interdigitated ingredients; in isolation, each is not sufficient but when variably combined produce a range of states that fall on a spectrum of what we call consciousness, and each of which might be variably disordered across the spectrum of conditions that neurologists are called upon to evaluate".

Consciousness and its disorders in medicine

In an attempt to outline the concept of consciousness, it is worth starting from medicine and, then, moving to other disciplines. In the field of neurology, anesthesiology and intensive care the definition of consciousness is pragmatically aimed to the diagnosis of its organic disorders, ranging between ordinary consciousness and coma, the endpoint of which is brain death. Here, consciousness is defined as awareness of oneself and the environment and the ability to intentionally respond to external stimuli (Plum and Posner 1980; Bauer, De Jesus, and Bunin 2022), while the disorders of consciousness—including coma, vegetative state, unresponsive wakefulness syndrome, covert consciousness, and minimally conscious state—have been defined as follows (Kondziella et al. 2020):

1. Coma is a state of profound unawareness from which the patient cannot be aroused.
2. Vegetative and unresponsive wakefulness syndrome are a condition of wakefulness without clinical signs of awareness, where patients may open their eyes but exhibit only reflex (i.e., non-intentional) behaviors and are considered unaware of themselves and their surroundings.
3. Covert consciousness is a term introduced following the report by Owen et al. (2006) of a seemingly vegetative patient who, when asked to imagine playing tennis or moving around her home, activated the predicted cortical areas in a manner indistinguishable from that of healthy volunteers. This intriguing fact has provoked a heated discussion, leading to the term covert consciousness being introduced in clinical practice.

4. Minimally conscious state, unlike the above definitions, includes unequivocal signs of intentional, non-reflex cortically mediated behaviors, though occurring inconsistently but reproducibly in response to environmental stimuli.

Delirium and confusional state, two similar conditions, are disorders of consciousness less severe than those mentioned above or emerging when coming out of them. The term delirium is used essentially when its cause is organic (e.g., brain injuries and drug administration). The main features of delirium are impairments in attention, memory and orientation associated to emotional and/or behavioral dysregulation, altered sleep-wake cycle, confabulation, delusions, perceptual disorders, which may fluctuate over time. The pathophysiology of delirium includes several but often unclear factors, including administered drugs (e.g. anesthetics and anticholinergic effects of administered drugs), patients' vulnerability (e.g., children and elders), beclouded dementia and undetected psychiatric disorders, and other stressor like infections, acute illnesses as well as non-pathological psychological factors (Jodati et al. 2013; Frontera 2011; Schiemann, Hadzidiakos, and Spies 2011). As a result, its pathophysiology remains elusive and the reductionist attempts to explain it on the base of clear-cut neurobiological mechanisms have been disappointing; furthermore, anxiety, post-traumatic stress disorder (PTSD) and other dissociative identity disorders may also cause delirium during stressful conditions (Armstrong, Cozza, and Watanabe 1997).

On phenomenological-existential perspective, a common physiological factor shared by the child and the elderly (and other frail patients) is the higher vulnerability and proneness to helplessness, loss of autonomy and confusion, all strongly favored by isolation, physical restraint, anxiety, previous bad experiences, pain and sedative drugs impairing the connection with the world.

Several drugs (including clonidine, analgesics, propofol, dexmedetomidine, ketamine and midazolam) have been reported to improve delirium; on the other hand, ketamine is a dissociative anesthetic and may cause delirium as well (Shurtleff, Radosevich, and Patanwala 2018). Likewise, midazolam (a sedative benzodiazepine mainly used in anesthesiology) has been reported to be both effective and useless in the prevention of emergency delirium, or even cause paradoxical reaction following IV administration for sedation (Breschan et al. 2007), while well-structured behavioral approaches seem to be superior to midazolam (Kain et al. 2007). If this is the case, non-pharmacological techniques are no less relevant than pharmacological ones, given their lack of interaction with previously administered

drugs and the huge overlapping between drugs causing delirium and those used to manage it.

The above-mentioned definitions of consciousness and its disorders show their elusiveness, at least partly due to the limits of the mechanist-reductionist approach essentially adopting the observation form a third person perspective (3PP). In fact, subjective phenomena cannot be understood unless the first and second person perspective (1PP and 2PP, respectively) are taken into due account with a phenomenological-existential approach, while subjective experiences cannot be detected without patient's communication.

If this is the case, there is a need to reexamine the consistency between facts, adopted definitions and related diagnostic schemata. In fact, a single linear causality oversimplifying the approach to the observed phenomenon is far from being enough to understand the multifactorial and arguably non-linear dynamics of consciousness and its disorders, a fact entailing huge epistemological, diagnostic, therapeutical and ethical implications. This has led some authors to advocate the need to approach delirium according to the theory of complex systems and their failure, where its manifestation stems from a set of both known and unknown, or poorly differentiated factors, including individual sensitivity to internal and external environment, frailties and risks (Eeles, Teodorczuk, and Mitleton-Kelly 2018).

The intrinsic limits of the clinical approach in the differential diagnosis between the disorders of consciousness listed above is clearly shown by the persistent high risk of misdiagnosis of vegetative state, minimally conscious state and covert consciousness, an estimated risk of about 30-40%. The use of investigative techniques—such as neuroimaging techniques (MRI and PET) and neurophysiological investigations (EEG and event-related potentials)—may help improving the accuracy of diagnosis but the hope to get a 100% reliability seems not attainable, "since available technology, no matter how sophisticated, cannot read a person's mind" (Celesia 2013).

About normality and the boundaries between health and disease

A similar uncertainty affects the concepts of normality, disorder and disease with relevant theoretical and practical implications, being the concept of normality conventional and mainly based on statistical assumptions. In the Cambridge Dictionary[3] the term normality is tautologically defined as the state of being normal, while the term normal is defined as ordinary or usual. The definitions of normality, health and disease have relevant social implications, depending on culture, values and time. For instance, masturbation

[3] https://dictionary.cambridge.org/dictionary/english/normality

and homosexuality were considered as diseases for most 20th century. Even the emphasis on biological state and the idea of a theoretical normality as natural state of the organism is flawed by the lack of anything absolutely standard in species design providing the criteria for normality (Reiss and Ankeny 2022).

According to Canguilhem, living beings and the environment are not "normal" if taken separately, but normality (and, thus, disorders) stems from their relationship (Canguilhem, 1989, pp. 203-232). This concept emphasizes that a proper understanding of the notions of health and disease should consider the mind-body-environment relationship, including the related subject's experience and activities. It also shows the limits of a narrow positivist-reductionist inclination to consider psychological and psychiatric disorders mainly as a matter of individual neurobiological alterations of universal validity. In this regard, it is noteworthy that new adopted definition and diagnostic criteria may favor their emergence and spread, as it happened in China with eating disorders following the publication of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) 3rd and 4th editions (Watters 2011; Lee, Chiu, and Chen 1989; Sing Lee et al. 2010).

The very concept of health seems to be a hardly solvable riddle, certainly not a binary condition health vs. disease. The wise definition of health by the World Health Organization (WHO)—as a "state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity"—has introduced a positive concept of health (i.e., living well rather than living long only) in the attempt to fill the gap between the totality of health and the limited aspect of disease. It has been paralleled by the perceived relevance of the patient as a person (not a plain carrier of disease), his/her dignity and resilience in the psycho-existential dimension, including spirituality (WHO 1946; Mezzich 2005). On the other hand, some authors have claimed the need for a new definition based on the ability to adapt and self-manage in face of social, physical, and emotional challenges (Nobile 2014). Others have criticized the "utopian" WHO definition of health, become unfit for dealing with the new challenges arising from the progressive increase of aging and people with chronic diseases. Therefore, a new definition of health has been introduced as the capability to cope with and manage one's own malaise and well-being conditions (Leonardi 2018). An example challenging the conventional concepts of health is the fruitful life of Stephen Hawkins, one of the greatest physicists of 20th century, shining for wisdom and resilience despite his severe disability due to severe motor neuron disease.

If the definition of physical health remains uncertain, it is even more elusive when subjective symptoms and functional psychiatric disorders are

concerned (Facco, Casiglia, et al. 2017; Berganza, Mezzich, and Pouncey 2005; Banzato, Mezzich, and Berganza 2005). The elusiveness has also been enhanced by the positivist inclination of medicine, relying on a dichotomic distinction between normality and pathology where psychiatric disorders have been mainly defined as individual neurobiological disorders. The (naïve) belief in the universal value of such definitions and related management criteria may harm suffering people, when applied *tout court* to other cultures (Watters 2011). Furthermore, the adoption of too narrow definitions and diagnostic criteria may lead to normal subjects being wrongly taken for diseased, a fact raising the criticism of several diagnostic criteria of the DSM-5 (Frances 2014; APA 2013; Padmanabhan 2017; Stephenson 2015).

For instance, the inclusion of the prolonged grief disorder in the DSM-5 has been a hard job, since grief is a universal, painful experience and an essential component of life. If a prolonged, unsolved grief may benefit from psychological and pharmacological support—and, thus, may correctly take place in psychiatric nosography (Prigerson et al. 2021)—it cannot be psychiatrized as a disease *tout court*, for it turns a profound, meaningful ordeal of philosophical nature into a mental disorder. Relevant and potentially harmful uncertainties persist in the definition of prolonged grief, including:

a) the distinction of dysfunctional grief from normal one (an essential step to recognize it as diagnosis);
b) the unavoidable use of cut-offs in classifications (e.g., grief duration more than 6 or 12 months), that remains conventional and arbitrary though based on experts' consensus;
c) the presence of significant distress is part of subject's suffering and functioning, but is common to both disorders and normal life, especially when the threshold for clinically significant distress is not specified (if possible).

This last is a problem common to most psychological disorders, making the distinction between normality and clinically relevant disorders at least partly arbitrary or uncertain (Eisma, 2023).

Another intriguing topic in this context is the inclusion of possession in the DSM-5 among dissociative identity disorders—a condition where perceived other identities are attributed to an external entity (demon, deity, spirit, or human being)—given that possession may also belong to ASCs. The inclusion of this intriguing condition with its parapsychological halo, has been wisely justified by the need to comply with the values of cultural worlds other than the Western scientific one. Nevertheless, in the attempt to differentiate what is a normal part of a broadly accepted cultural or religious

practices from pathological conditions meeting the criteria for dissociative identity disorders, the DSM has implicitly considered the latter as a non-cultural phenomenon entailing the need for diagnosis. Concurrently, it entails an arbitrary distinction between acceptable and pathological possession irrespective of other cultures' views, where possession may cause suffering and the need for care as well without being considered as a "disease" (as defined by the Western conceptualization).

In other words, the DSM-5 may turn a form of distress into a disease, with the risk of reducing shrines to places where culturally acceptable manifestations of what remains a mental illness in itself may occur. At any rate, their Western explanation remains biomedical, disregarding alternative conceptualizations and theories that have been well analyzed by ethnopsychiatry and anthropology (Padmanabhan 2017; Stephenson 2015; Kirmayer 2006; Frecska and Luna 2006). As a result, several authors have criticized the inclination to consider the definition of psychiatric disorders as universally valid, stripping them of their cultural context and psychosocial experience to be faced from an emic perspective (Watters 2011).

Interestingly, hypnosis (that has also been included in the ASC classification) is closely connected with dissociative identity disorders and possession since the beginning. Johann Josef Gassner—an Austrian priest and renown exorcist of late 18th century—successfully treated possession (as well as headache) by exorcism with a method sharing some similarities with Mesmer's animal magnetism (Peter 2005). Later on, Justinus Kerner, general physician and public health officer in Weinsberg (Germany), reported on 11 cases of possession, of which 5 recovered following mesmerism (Kerner 1836). At that time the first cases of multiple personalities were also identified and Kerner described a case of possession explicitly mentioning the concept of multiple personality (Peter 2011).

The experience of other identities is not necessarily dysfunctional. There is a wide grey, still ill-defined non-pathological area between the so-called "normality" and dysfunctional conditions (Facco, Mendozzi, et al. 2019). Outstandingly, Milton Erickson, the father of naturalistic hypnosis, considered multiple personalities (the previous term used to indicate dissociative identity disorders) and experiences of other identities as not necessarily dysfunctional (Erickson 2009). Rather, he considered most cases as non-pathological subjects prone to recurring periods of amnesia and dissociation, who might disclose potential resources. Therefore, he treated the "alternated selves" as subject's collaborators – he always treated respectfully – in order to help control and positively integrate them in patients' personality and overcome dissociation (Richeport 1992; Erickson 1991).

The idea of possession has crossed all times and cultures and the competence in their management has been contended between medicine, psychology, religion, parapsychology and spiritism – each of them provided with specific explanations (depending on their *Weltanschauung*) and therapeutic tools, including drugs, psychotherapy, exorcism, spells and shamanic rituals. The historical link between hypnosis and Spiritism, mediumship, exorcism and Psi phenomena (such as extra sensorial perception and clairvoyance), together with the ostensible oddity of its manifestations, supported an increasing concern and prejudicial refusal by the medical class in 18th and 19th centuries.

The claimed oddity of hypnosis depended on the post-Enlightenment rationalism and the century-old idea of man as a superior, monolithic creature beloved by God and endowed with a rational soul—an ill-founded, self-referential (one might say narcissistic) but well-established opinion (Bodei 2009). Furthermore, the ostensible oddity of hypnosis led to its a priori refusal by a medical class willing to get rid of any shadow of quackery through an increasingly rigorous scientific method. The absurdity of hypnosis also depended on the utter ignorance of the unconscious that, indeed, has been discovered in the latter 19th century thanks to hypnosis.

Cesare Lombroso, the icon of criminal atavism, was a renown hypnotist and was also interested in Spiritism and mediumship, he studied with a rigorous positivist stance in an epoch when the discovery of electromagnetism, X-rays and the introduction of electric light raised the interest in new invisible physical energies (Facco, Fabris, et al. 2019). At that time, the Society for Psychical Research was founded with the aim of investigating the dark side of the occult with rigorous a scientific method. Many outstanding personalities were its members—including Sir William Barrett, Pierre and Marie Curie, Sigmund Freud, Karl Gustav Jung, Francis Galton, as well as Cesare Lombroso (Alvarado 2002). The International Congress of Psychology held in Paris in 1900 included scientific sessions on hypnotism, where Charcot presented his findings on the relationship with hysteria and Lombroso with Spiritism; later on, Lombroso published a book entitled *Hypnotisme et Spiritisme* (Lombroso 1910). This surge in a rigorous scientific approach to psychical phenomena favored by the cultural climate of late 19th century concurrently paved the way to logic positivism and physicalism of the Circle of Vienna (Carnap 1928) and to the resulting refusal of anything "non-physical".

In conclusion, the data reported above show the huge improvement of knoweldge of consciosuness, its disorders and their management in medicine in the past decades. At the same time, it shows its inevitable weakness; this is especially remarkable when dealing with subjective

phenomena for they are more vague and hardly (if possible) measurable than physical ones, while the scientific method dating back to Descartes and Galileo has been designed to study the physical world from a mathematical-geometrical perspective blind to subjectivity.

The theories of consciousness

The definition of consciousness and its disorders discussed above is undoubtedly correct, but it reflects only some though relevant aspect of consciousness approached through the objectivist stance of medicine and aimed at the management of its disorders.

Consciousness, entailing the inner world and its inseparable relationship with both the unconscious and the outer world, is a much more complex topic. The close interrelationship between consciousness and other mental faculties also makes it difficult, if possible, to separate what belongs to consciousness per se from other mental activities that strongly influence it, despite not being in themselves elements of consciousness. Actually, consciousness includes both quantitative elements (the waking condition with its changes, from excitement to drowsiness, down to the threshold of sleep) and qualitative components (such as mood, emotion, intellect, behavior, language, memory etc.) strongly affecting each other. Figure 1-1 shows the main components of consciousness, and the relationship with its disorders and NOMEs. Among the features of consciousness, soul and spirit have been included here adding a question mark (be they conscious or partially/totally unconscious). In fact, they have been unceasingly included in the philosophical reflection on consciousness and mind of all ages and cultures and have been mentioned by both Freud and Jung. On the other hand, they have been rejected by physicalism in early 20th century, due their abstract incompatibility with the adopted axioms; as a result, they have been left out by the mainstream monist materialist strand of the science of consciousness. At any rate, being axioms undemonstrated by definition, the refusal of soul and spirit is an arbitrary stance. This has been well pictured by Williams James, who commented: "*Souls are no longer fashionable*" (quoted by Assagioli, 1993, p. 74).

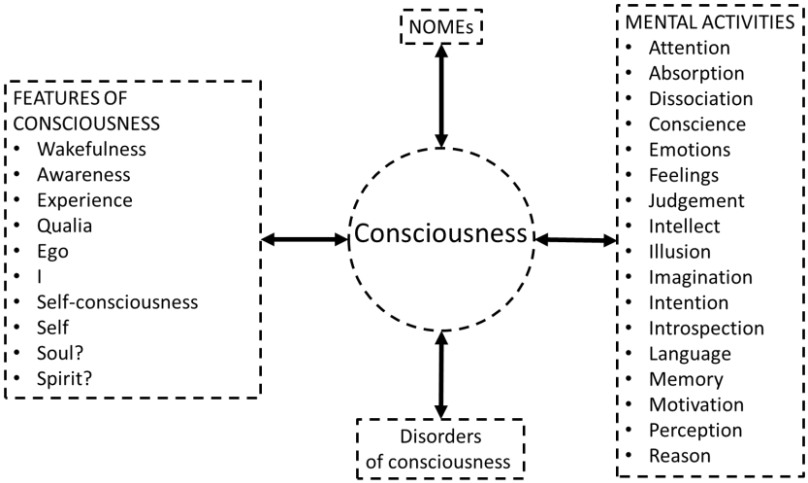

Fig. 1-1 Main components of consciousness and related mental activities (they have been marked by dotted lines to emphasize that they belong to an inseparable functional continuum not to be ontologized as different, independent structures).

Merging consciousness and the unconscious in a whole

A further relevant aspect in the science of consciousness is the role of the unconscious, a topic ignored in the history of philosophy and medicine until its discovery in late 19th century in the West. Furthermore, being unperceived and not easily explorable, it has been generally understated or neglected even in the 20th century, despite it enacts a bidirectional unceasing communication with consciousness.

In this regard, it is worth considering that Eastern philosophies devoted themselves to a rational, introspective analysis of inner world and its relationship with reality since the beginning of history, reaching an unmatched knowledge on consciousness and unconscious processes over 2,000 years ago with a deeper view with respect to Western psychology. In Buddhism, *ālayavijñāna*—the fundamental consciousness or store consciousness (including imprinting, inclinations and memories) reported in the *Abhidarma* and in the *Laṇkāvatārasūtra*—is the unconscious base supporting the conscious mind as part of the mental continuum giving rise to the ego (Dalai Lama, 2002; Porter, 2012). The unconscious in Zen Buddhism extends far beyond the Freudian one and the Jung's concepts of archetypes and symbols to reach the deeper level of the no-mind and *buddhadhātu* (suchness,

Buddha-nature, self-nature) that is common to all sentient beings (Facco, 2014, 348-360; 2017).

According to Perlovsky,

> "Most of the brain's operations (more than 99%) are inaccessible to subjective consciousness. The mind operates with 'islands' of conscious-logical states in an ocean of unconsciousness; it 'jumps' among conscious-logical islands over an ocean of unconscious states. And all the while we remain subjectively convinced that we are conscious. Since consciousness deals only with logical states, it is biased toward logic. For thousands of years logic has occupied a privileged position in our understanding of the mind's operations. This might explain why, after Gödel's publications received wide recognition, logic still occupies a firm place in artificial intelligence, modeling the mind, and in psychology … The computer's operations are logical, but on a different level from your "logical" understanding of this article. A computer does not understand the meaning of this article the way a human reader does. The reader's logical understanding is on top of 99% of the brain's operations that are not 'logical' at this level. Our logical understanding is an end state of many illogical and unconscious dynamic logic processes" (Perlovsky 2013).

If this is the case, consciousness may be metaphorically represented as the Highway 1 to Key West (Florida), covering 100 tiny islands, 42 bridges and one long open road, where the islands are consciousness, the ocean the unconscious, and the highway jumping among the islands is the ordinary consciousness ignoring to be jumping. Likewise, in the Freud's metaphor of consciousness as the tip of the iceberg one must be aware of its inseparability from the part laying under the waterline: there are neither solution of continuity nor changes in their nature, despite they appear phenomenally different. Therefore, one should refrain from separating them in the knowledge of human mind. Nevertheless, the centuries-old Western rationalism and the ignorance and neglect of the unconscious have wrongly led to consciousness being considered as the rational structure at the base of human beings, while the importance of unconscious processes has been understated even after its discovery.

Unconscious thoughts and dreams are very relevant in cognitive processes, especially for the solution of complex problems and fruitful intuitions in art, philosophy and science. Among the many cases collected by Deirdre Barrett (2001), it is worth mentioning two outstanding cases. The first is Descartes, whose *Discourse on the Method* was inspired by two revealing dreams showing him the new "wonderful science" (Maclean, 2006, p. xii)—a surprising fact, given his rationalist stance and radical doubt. The second is the dream of Otto Loewi, leading him to demonstrate the

chemical conduction from the nerves to the heart, earning him the Nobel Prize for Medicine in 1936. The full story has been reported by Popper and Eccles (1977, 496):

> "In his [first] dream saw the way to accomplish this experiment. He awakened the next morning realizing he had had a dream, and it was important, and could remember no details. The next night, to be sure, he put a paper and pencil by his bed, and, as he anticipated, the dream came again to him, he wakened up, remembered the dream, and wrote up with pencil and paper what the dream was about. Next morning he remembered he had written it and anxiously grabbed the paper and looked at it, but alas couldn't interpret it at all. So, the final solution was of course not to trust paper and pencil. On the third night he fully awakened himself and made a full plan of the experiment. The dream experiment was immediately carried out in his laboratory. It was successful and for this discovery Loewi was awarded the Nobel Prize in 1936, sharing it with Sir Henry Dale who many years later told me the full account of this sequence of the three dreams. Later in his life Loewi greatly simplified the story, eliminating the first two nights. The final erroneous legend was reported knowingly by Dale in his biography of Loewi in the Obituary notices of the Royal Society!".

The concept of unconscious knowledge seems a sort of oxymoron at a first glance but is a topic of paramount importance. According to Augusto, unconscious knowledge is not just knowledge that fails to reach consciousness; rather, it is qualitatively different from conscious knowledge and achieved by different ways of cognition (Augusto 2010). For instance, unconscious thought is routinely though inadvertently used in clinical practice, especially in the field of emergency where doctors must make quick decisions in a complex and elusive setting without enough time to think (Nyatanga and Vocht 2008; Pearson 2013). It has been universally recognized as a virtue of expert doctors and defined in terms of clinical experience and intuition. Indeed, it is the result of years of practice, observed cases and introjected models enabling a fast unconscious processing of information. Its main feature seems synthetic rather than analytic, a property recalling Kant's synthetic a priori judgment; the difference here is that what seems to be "synthetic a priori" is the result of long training, acquired models, unconscious knowledge and processing.

Procedural knowledge is unconscious; it may even be more robust than the one explicitly obtained and, unlike declarative knowledge, it is not lost in amnesia. In Augusto's opinion, it might depend on a lack in

metaknowledge[4]. On the other hand, unconscious knowledge probably extends far beyond the limits of procedural knowledge, also involving higher-order cognition and wisdom, according to its neuropsychological interpretation by Elkhonon Goldberg. In fact, wisdom allows almost instantaneous and seemingly spontaneous knowledge of the solution of an unexpected thorny problem and to anticipate those events from which most people are taken aback. It is not incompatible with analytical elaboration; rather, it stems from unconscious processing of information and interpretative models acquired throughout life. These models behave as attractors (i.e., strongly connected neuronal circuits, mainly including broad range connections in the right hemisphere) allowing for a greater speed of processing according to specific models and configurations, a fact also allowing for great energy saving (Goldberg 2006).

In this regard, it is worth emphasizing that the Western world has lost the meaning of the terms wisdom and sageness. According to Giorgio Colli— one of the most outstanding scholars of pre-Socratic philosophy of 20th century—the term philosphy, coined at the time of Plato, does not mean the love for wisdom one is seeking for; rather, it indicates the loss of that wisdom that has been irretrievably lost (Colli, 1975, 13-14). For instance, the current meaning of the term wisdom reported in the Cambridge Dictionary is "the ability to use your knowledge and experience to make good decisions and judgments", viz., a simple good use of knowledge[5]. The Merriam-Webster Dictionary provides a slightly better definition[6]: "a) ability to discern inner qualities and relationships: insight; b) Good sense: judgment; c) generally accepted belief; d) accumulated philosophical or scientific learning: knowledge; e) a wise attitude, belief, or course of action; f) the teachings of the ancient wise men". Here too, wisdom is mainly considered as good sense and knowledge, while the crucial aspect, i.e., the teaching of ancient wise men, is only mentioned without defining it.

When the term sageness is concerned, the Merriam-Wbster Dictionary only reports the adjective sage, referred to a mature or venerable person of sound judgment or wisdom. In the Oxford Dictionary it is defined as the quality of being sage, profound wisdom[7], i.e., a tautology. This reflects the loss of its meaning in Western culture, a fact leading to sageness having has

[4]The term metaknowledge indicates knowledge about acquired knowledge, i.e., one's understanding of what and how something is known, including the awareness of learning processes, cognitive abilities, and levels of comprehension.

[5] https://dictionary.cambridge.org/dictionary/english/wisdom

[6] https://www.merriam-webster.com/dictionary/wisdom

[7] https://www.oed.com/dictionary/sageness_n?tab=meaning_and_use

become a very uncomon term typically occurring fewer than 0.01 times per million words in modern written English.

If this is the case, it is necessary to reappraise the definition of wisdom and sageness in ancient thought, for they belong to the highest expressions of human mind with their cognitive and metacognitive relevance and their role in the process of Self realization and enlightenment.

In ancient Greek, wisdom is defined using several terms, i.e., σοφία (*sophýa*), σωφροσύνη (*sophrosýne*), μῆτις (*metis*), φρόνησις (*phrónesis*), φραδισσύνη (*phradissýne*). The terms *sophýa* and *sophrosýne* also denote sageness. *Sophýa,* before the time of Plato, indicates a not easily definable set of knowledge of the highest degree and discernment of values, including the ability to distinguish good from evil. The idea of wisdom as spiritual perfection with its moral implications corresponds to term *phronesis*. Aristotle tries to define the concepts of wisdom and sageness in the *Nicomachean Ethics* (VI, 5,7).

> "As for Practical Wisdom, we shall ascertain its nature by examining to what kind of persons we in common language ascribe it. It is thought then to be the property of the Practically Wise man to be able to deliberate well respecting what is good and expedient for himself, not in any definite line, as what is conducive to health or strength, but what to living well … It remains then that it must be 'a state of mind true, conjoined with reason, and apt to do, having for its object those things which are good or bad for man' … In fact, this is the reason why we call the habit of perfected self-mastery by the name which in Greek it bears [*sophrosýne*], etymologically signifying 'that which preserves the Practical Wisdom' … So it is plain that Science [*Sophía*] must mean the most accurate of all Knowledge; but if so, then *the wise man must not merely know the deductions from the First Principles but be in possession of truth as regards the First Principles*… It is plain then that Science is the union of Knowledge and Intuition and has for its objects those things which are most precious in their nature. Accordingly, Anexagoras, Thales, and men of that stamp, people call sage, but not Practically Wise because they see them ignorant of what concerns themselves; and t*hey say that what they know is quite out of the common run certainly, and wonderful, and hard, and very fine no doubt, but still useless because these sages do not seek after what is good for them as men*" (Italics added).

The common element of wisdom and sageness is to cultivate reason and intelligence and at the same time transcend them. To go beyond reason and intellect does not mean to be irrational: it is clear that both a wise and a sage man are intelligent and rational, but an intelligent and rational man may not be at all wise, much less sage. Likewise, the Eastern philosophies are intimately and profoundly rational, but they do not remain entangled within the limits of conceptual thought and logic. The Aristotelian definition and

distinction of wisdom and knowledge suggest that wisdom is a gift addressed to the human world, albeit from a higher perspective and not egoistic, and sageness as superior to wisdom because it addresses great principles, the universals; therefore, they are possible only to those who have reached the liberation from the narrow limits of the Ego and the attachments of ordinary consciousness. It seems reasonable to envisage more of a difference of degree than of nature in this distinction, along a path of progressive spiritual realization and liberation from the illusory stance of the ordinary egocentric perspective.

On the other hand, Aristotle provides a definition starting from 3PP, i.e., how the wise and the sage look. Aristotle mentions pre-Socratic philosophers as sage men of the past, a fact confirming the Giorgio Colli's view of the birth of the term philosophy as love of that sageness that had been lost. Understanding sageness is a hard job, for it entails the enigmas, the apparent contradictions and obscure symbols sinking their roots in Greek Mysteries, a fact endowed with huge historical and epistemological implications. It is a quality of pre-Socratic philosophers as well as great Daoist philosophers and Mystics of the Abrahamic tradition (the topic will be discussed in next chapters). Wisdom and sageness do not refer to explicit contents of knowledge, but are a matter of experience, a way of being, a condition of the spirit, which is hardly communicable—therefore not directly transferable from one subject to another, as is the case with the elements of rational knowledge (Tonelli 2009; Kingsley 1999).

Recent data on unconscious thought have shed some light on its relevance for cognition and creativity and suggest that consciousness cannot be properly understood unless its relationship with sleep and dream and other ASCs is taken into due account. Actually, unconscious thinking is an invaluable cognitive function, actively involved in decision-making processes, the formation and change of attitudes, the solution of complex problems, and creativity. It improves decisions making off-line, so to say, in that the decision matures after a period of distraction or even sleep, during which the unconscious processes continue to deal with the problem (Dijksterhuis and Strick 2016; Ritter and Dijksterhuis 2014; Dijksterhuis and Nordgren 2006). The old saying "the night brings advice" seems appropriate here and reflects the outstanding intuitive knowledge of folk wisdom.

Intuition has a close connection with the above-mentioned factors. Considered in the past as a pre-logic activity, intuition is still ill-known and traditionally attributed to a sort of sixth-sense. Instead, it 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 has

some similarity with the Greek concept of νοῦς (*noûs*), defined as immediate vision and comprehension, a process underpinned by fast, unconscious processing.

All this given, there is some good reason to revise the concept of unconscious and its relationship with consciousness. Probably, the traditional but wrong split between the two stems from the ego-centered Descartes' *Cogito ergo sum* as well as the Freudian unconscious as a seemingly alien irrational structure. This separation has in turn led to unconscious cognition being approached as a form of dissociation from conscious representation (Augusto 2016). Indeed, the term dissociation is ambiguous and potentially misleading due to the wide range of its meanings; it has also been questionably used for over one century in the attempt to define hypnotic phenomenology (Facco 2022b). The discovery of unconscious processes able to perform high-level functions—including reasoning, decision making and cognitive control—that were usually considered as exclusive competence of consciousness, has led some authors to advocate the need to rethink the whole topic and define *The New Unconscious* (Hassin et al., 2005; quoted by Kastrup, 2017).

The unconscious is not an alien entity and can perform the same high-level functions of consciousness. If, according to evolutionary theories, consciousness is a recent product of human development, then unconscious processes are an essential aspect of knowledge and adaptation to reality profitably used for tens to hundreds of thousands of years (Hassin 2013). The traditional ego centered stance of philosophy and science neglecting the unconscious has inadvertently led to understate its role and self-referentially overestimate the role of consciousness, confounding unconsciousness with involuntariness and unconscious decision with lack of free will. Instead, the unconscious is endowed with high-level functions, including working memory, multisensory integration, emotion perception and recognition, non-conscious reading, and expectations (Goldstein and Hassin 2017).

If this is the case, the core of the problem is the integration of conscious and unconscious processes in a whole; it has been outstandingly introduced by Jung with the concept of individuation, allowing for self-transformation and Self realization up to the level of wisdom and sageness. Indeed, sageness can be hardly defined conceptually for it is not a matter of abstract, isolated logical-analytical faculties but it calls for gathering higher mental faculties and experience, merging the inner and outer world as a whole. This had already been defined by Heraclitus as follows:

> "Wisdom is one thing: to understand the intelligence by which all things are steered through all things; it is willing and it is unwilling to be called by the name Zeus" (Fragment 32: DK 22B32) … The way of man has no wisdom,

> but that of God has (Fragment 79: DK 22B79) … No one of all whose discourses I have heard has arrived at this result: the recognition that wisdom is apart from all other things (Fragment 109: DK 22B109) … To be temperate is the greatest virtue; and it is wisdom to speak the truth and to act according to nature with understanding" (Fragment 113: DK 22B113).

In short, consciousness and mind with their neurocorrelates involve inseparable conscious and unconscious activities, allowing for cognition and metacognition, knowledge and metaknowledge plus a wealth of other no less relevant activities like affectivity, all merged in a whole. As observed by Kastrup,

> "From a theoretical standpoint, it is conceivable that mental activity the ego cannot access through introspection could still be conscious, in the sense of being phenomenally experienced somewhere in the psyche… in a manner – or in an area of the psyche – that escapes egoic introspection" (Kastrup 2017).

The continuum of consciousness-unconscious (the Freud's iceberg is an indivisible whole in itself) is in line with the psychoevolutionary theory of consciousness introduced by Solms and Panksepp (2012) and the Tulving's triadic classification of consciousness and memory (Tulving 2002), where deep brain structures allow for anoetic phenomenal experiences, upper limbic structures for noetic consciousness and neocortex for autonoetic, reflexive consciousness. Anoetic forms of experience are affective without being "thought", noetic ones are related to exteroceptive perception and cognition (therefore are "thought"), while autonoetic include abstracted forms of perception, reflection and cognition as well as mind eye and metacognition.

According to Solms and Panksepp's theory, the origin of consciousness is centrencephalic rather than cortical, where the nuclei in the brainstem reticular formation, including the periaqueductal grey, are the basic somatosensing structures necessary for the first pleasantness-unpleasantness detection, core consciousness and core self to emerge (Parvizi and Damasio 2001). Their bidirectional hierarchy entails a circular interaction of brain functions. In the bottom-up hierarchy, primary anoetic processes give raise to secondary noetic ones and these influence the tertiary autonoetic ones, while in the top-down processes the autonoetic reflection allows for regulation of noetic and anoetic experiences. In other words, previous experiences affect the way the subjects respond to the present ones, while subsequent experiences may alter the effects of previous ones. The centrencephalic origin of consciousness is also compatible with its definition as an emergent property from the complexity of the brain.

Actually, the egoic consciousness is not the foundation of human beings but, rather, is the thin surface of a much deeper mind, where experience may range between anoetic and autonoetic levels. Qualia seem to be enough for a mental process being considered conscious, though they are anoetic in themselves; their first appearance is affective-motivational and results from processing quantitative and qualitative information in terms of pleasure-unpleasure. This is compatible with the Damasio's hypothesis of the *somatic marker*—including the ventromedial prefrontal cortex, amygdala, somatosensory cortices, hippocampus and, probably, basal ganglia (Damasio 1996)—but may extend to more caudal structures, like the periaqueductal grey in the brainstem. It is worth noting that the periaqueductal grey plays a relevant role in pain modulation, autonomic and negative affective reactions as well as defensive behaviors, while its dysfunction have been detected in fibromyalgia and neuropathic pain (Gross and Canteras 2012; La Cesa et al. 2014; Seifert and Maihöfner 2009; Cifre et al. 2012).

Thus, the comprehension of consciousness and its non-ordinary expressions is a very hard and tricky job, that has been at the same time favored and hampered by previous knowledge, adopted axioms and theories. Its very definition is problematic and, perhaps, a single exhaustive definition is not possible. Paraphrasing a famous sentence by Winston Churchill, one can say that consciousness is a riddle, wrapped in a mystery, inside an enigma; but perhaps there is a key. In fact, consciousness is hardly reducible to a simple set of features and is part of an indivisible interrelationship between inner (both conscious and unconscious) and outer worlds in their dynamic, reciprocal influence.

Indeed, consciousness is the mother of all problems, since even the physical reality, as it is known, and science itself are a product of consciousness and live in its world. Furthermore, consciousness is diachronic – i.e., it cannot be properly comprehended outside history and culture, as emphasized by Jaynes (1990, 2014)—a fact in line with the metatheory of consciousness and its altered states by Tart (1976).

If this is the case, the boundaries between ordinary consciousness and NOMEs are time and culture dependent. Tart wisely defined ordinary consciousness as a semi-arbitrary construction resulting from automatized habits of thinking, feeling, perceiving and acting, where the beliefs and prejudices are the results of the process of automatization leading to their cultural relativity and arbitrariness being skipped (Tart 1986). For instance, the modern Western culture has been a priori inclined to consider some experiences, such as visions and premonitory dreams, as a matter of illusions, hallucinations or delusions, while they were considered as normal or even welcome in ancient times (as well as today in other cultures), showing their

dependence on the adopted *Weltbild.* It is worth remarking that ancient peoples were not gullible and held a clear distinction between truthful and untrustworthy dreams, as reported by Homer in the *Odyssey:*

> "[Penelope, speaking to the Stranger (Ulysses, she had not recognized)] Listen, then, to a dream that I have had and interpret it for me if you can. I have twenty geese about the house that eat mash out of a trough, and of which I am exceedingly fond. I dreamed that a great eagle came swooping down from a mountain and dug his curved beak into the neck of each of them till he had killed them all. Presently he soared off into the sky and left them lying dead about the yard; whereon I wept in my room till all my maids gathered round me, so piteously was I grieving because the eagle had killed my geese. Then he came back again, and perching on a projecting rafter spoke to me with human voice and told me to leave off crying. 'Be of good courage,' he said, 'daughter of Icarius; this is no dream, but a vision of good omen that shall surely come to pass. The geese are the suitors, and I am no longer an eagle, but your own husband, who have come back to you, and who will bring these suitors to a disgraceful end.' On this I woke, and when I looked out I saw my geese at the trough eating their mash as usual.
> This dream, replied Odysseus, can admit but of one interpretation, for had not Odysseus himself told you how it shall be fulfilled? The death of the suitors is portended, and not one single one of them will escape.
> [Penelope] Stranger, dreams are very curious and unaccountable things, and they do not by any means invariably come true. There are two gates through which these unsubstantial fancies proceed; the one is of horn, and the other ivory. Those that come through the gate of ivory are fatuous, but those from the gate of horn mean something to those that see them" (Odyssey XIX, 650-).

Definitions and theories of consciousness

There are several definitions and different theories of consciousness interpreting its neurophysiological, social, and computational dimensions, also extending to quantum physics. The mechanist-reductionist approach, limited to the understanding of its neurocorrelates, considers consciousness as an epiphenomenon of the cerebral circuits, while in neuropsychology the concept of consciousness extends from the "minimal phenomenal experience"—consisting of a minimum non-conceptual representation of the experience, a concept akin to consciousness without content (Srinivasan, 2020)—to definitions including self-consciousness (Zeman, 2001). It is worth noting that the concept of minimal consciousness stems from the study of Oriental contemplative traditions, while Zeman's article, though placed in the context of neuroscience, strongly emphasizes the importance

of qualia, that have been denied by the ruling materialist stance. As Zeman correctly states:

> "The suggestion that conscious events are identical with the corresponding neural events offers a reductionist and materialist, or physicalist, solution to the mind-body problem. There is nothing particularly modern about such view; it was taken by Lucretius in the ancient world and Thomas Hobbes in the 17th century. But a number of recent examples of successful reduction have reinvigorated materialist theories of mind. Often cited examples include the 'reduction' of heat to kinetic energy of atoms, the explanation of light in terms of electromagnetism and, perhaps of clearer relevance to consciousness, the analysis of 'life' as a set of physiochemical properties possessed by certain complex systems which are able to utilize energy from their surroundings to reproduce themselves. Why should consciousness be an exception to the stream of successful reductions of phenomena once considered to be beyond the reach of science?
>
> There are some arguments suggesting that it might be an exception. Current physical theory teaches that light, in its physical existence, is identical to, is nothing more than, a certain type of electromagnetic radiation. To know everything about such radiation would be to know everything about light. But is less clear that if we could know everything about the physicochemical properties and behavior of an organism we would know everything about its experience. For example, how far can scientific investigation take us towards an appreciation of the subjective experience of an animal equipped with sense we lack, like the echolocatory sense of bats and dolphins (Nagel, 1979)? Or, to come closer to home, could a blind student of the visual system ever gain the knowledge, which the sighted naturally possesses, of 'what is like to see' (Jackson 1982)? This line of questioning suggests that conscious experience has subjective properties which are not fully specified by and cannot be reduced to the neural structures and processes on which they depend. On this view, the analogy between the reduction of conscious processes to neural processes and the reduction of 'light' to electromagnetism fails, because in the latter case we legitimately set aside the properties of experience (e.g., what light looks like to us), while in the former the properties of experience are precisely the matter at issue … The properties of experience are robust phenomena in need for explanation".

Julian Jaynes' bicameral mind

Jaynes' theory of consciousness published in his seminal work *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (Jaynes 1990) was outstanding and innovative and, as such, raised both great consensus and criticism. According to Jaynes, consciousness is the result of a learned process based on metaphorical language—e.g., a spatialized view of time