

# Towards the Complete Man: Consciousness, Psyche, Mind, Memory, Soul, and Spirit

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## Abstract

I present a general and personal view of the various aspects in which Man is and should be studied. The main problem lies in the lack of a fully accepted definitions of consciousness and 'normal' state of consciousness. The concepts of personality and consciousness are discussed. The most important issues in the study of consciousness are highlighted. The concepts of the field of consciousness and bandwidth are presented and discussed in relation with memory recovery and the processing capacity of the brain. The similarities and differences of consciousness, mind, and psyche are listed. The mind-brain problem is presented, and the many possible relationships are defined and commented. We highlighted some new topics such as the need and importance of being able to access all stored memories to become a more 'complete' *Homo sapiens*. Some possible non-physical components are briefly mentioned.

**Keywords:** Consciousness, psyche, mind, memory, soul, spirit, mind-brain problem, hallucinogens, Nietzsche.

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## INTRODUCTION

Friedrich Nietzsche wrote this in relation to consciousness. *'It is essential not to be mistaken about the role of 'consciousness': what has developed it is our relationship with the 'outside world'. On the contrary, direction, that is, vigilance and foresight in regard to the overall play of bodily functions, does not reach our consciousness; nor does spiritual storage reach us: it is not permissible to doubt that there is a higher instance for this: a kind of steering committee where the different main appetites assert their voice and their power. 'Pleasure' and 'displeasure' are signs from this sphere: . . . and also the act of the will. Ideas alike. In summa: what becomes conscious is under causal conditions that escape us completely, — the succession of thoughts, feelings, ideas in consciousness expresses nothing about this succession being causal: but things are apparently like this, to the maximum degree. On this appearance we have based all our representation of spirit, reason, logic, etc. (all this does not exist: they are synthesises and fictitious units)... And these we have projected again into things, behind things! Consciousness itself is usually taken as a global sensorium and supreme instance: however, it is but a means for communicability: it has developed in the*

*dealing, and in relation to the interests of the deal... understood here this 'treatment' with the inclusion of both the influences of the external world and the necessary reactions on our part to them; as well as our influences on the outside. Conscience is not management, but an organ of direction.'* —(Nietzsche, 2008).

The 'mind' is a field that has, beyond what is currently known, immense new regions to discover. And what would be the approach that should be used to be able to advance in this field?

Of course it should be the scientific method (Armstrong, Green, & Mahoney, 2022; MacRitchie, 2022), without tricks or lies (J.-S. Gómez-Jeria, 2023b; J. S. Gómez-Jeria, 2023) And who exactly are the subjects that will be studied? The various types of *Homo sapiens* (see below), for which one should proceed as follows: 'we must begin with ourselves as we are (J.-S. Gómez-Jeria, 2023a) without worrying about what kind of 'being' this is, we begin with the human being, not with reason, not with the rational soul, not with a higher being called spirit, but also not only with nature, with the mere living being, but with the real human being as we know him from our

*experience'* (Di Vincenzo & Manzi, 2023; Kozowyk, 2023; Kumar & Campbell, 2023; Meneganzin & Bernardi, 2023; Pomeroy, 2023; Reilly, Tjahjadi, Miller, Akey, & Tucci, 2022; Sansalone *et al.*, 2023; Sevim-Erol *et al.*, 2023; Skov *et al.*, 2022). This restriction leaves us, for the moment, in the situation of 'discovering islands' of knowledge without yet knowing how to connect them all. It is somewhat similar to the case of archaeology: we have for example the wonderful necklace found in Ba'ja (Jordan, 7,400–6,800 BCE) (Alarashi *et al.*, 2023) at the site of Göbekli Tepe (Turkey, 9,500 BCE) (Dietrich, Heun, Notroff, Schmidt, & Zarnkow, 2012; Dietrich, Köksal-Schmidt, Kürkcüoğlu, Notroff, & Schmidt, 2012; Peters & Schmidt, 2004) the pyramids of Egypt (Brichieri-Colombi, 2020; Fahmy, Molina-Piernas, Domínguez-Bella, Martínez-López, & Helmi, 2022; Minin, Minin, & Yue, 2020; Sharafeldin *et al.*, 2019) and many other archaeological sites dated to those same periods. But what we don't have yet is the 'history', the 'thread' that connects them all.

It is also necessary to mention that the strict application of the scientific method leaves out some philosophical and religious considerations (Cooper, 1985; Dewey, 1936; Feyereabend, 1977; Hattaway, 1978) that may involve entities with other ontological statuses and/or belonging to other different domains of existence. This non-belonging to the domain of applicability of the scientific method makes it impossible to use it to decide on some of the possibilities mentioned below. It is reasonable to suggest using the scientific method in order to get a full knowledge of the structure and functioning of the central nervous system. This knowledge can in no way serve to intrude in areas where this method cannot give scientifically founded opinions. On the other hand, the other various forms of knowledge that deal with non-physical aspects cannot issue judgments that go against what has been scientifically proven to be true.

Here we present a general and personal view of the various ways in which Man is studied. We highlighted some new topics such as the need and importance of being able to access all stored memories.

## I. Personality.

Let's start with a brief explanation about the possible stages in personality development from childhood to adulthood (Apter, 2018; Lamb, 1978; Larsen & Buss, 2008; Mangan, 1982; McAdams, Shiner, & Tackett, 2019; Specht, 2017; Tetzchner, 2023). According to several psychological and developmental theories, personality formation begins from early childhood, shaped by genetic factors and initial interactions with parents. Then, as the child grows, relationships with peers, siblings, schooling come into play. The sense of personal identity and self-concept is developed. In adolescence, factors such as pubertal changes, progressive separation from parents,

exploration of individuality and sexuality, peer group, contribute to consolidate important personality traits. Upon reaching adulthood, work experiences, couple bonds, parental role if given, determine the evolution of the personality already formed but still malleable. Life crises, losses, stressful events continue to shape the personality in middle age and old age, as well as the way to cope with physical deterioration and the proximity of death.

Personality does not seem to reside in a single neural substrate, but is based on the complex interaction between various brain structures and systems (Canli, 2006; Mangan, 1982). The prefrontal cortex, crucial for executive functions, is linked to traits of responsibility and meticulousness. Neurotransmitter systems such as serotonin and dopamine are associated with personality dimensions such as emotional stability and novelty-seeking. The hippocampus and amygdala, related to memory and emotion, are relevant to consolidate the sense of identity. The frontal and temporal lobes mediate social and communicative skills. The connections between the 'social brain' and the limbic system underpin empathy and extraversion. Widely distributed neural networks underlie distinct cognitive styles. Oscillatory patterns in various frequency bands distinguish varied temperaments. In summary, the evidence suggests that personality emerges from the dynamic integration between various neural systems and networks and does not appear to be located in a singular, isolated substrate. The tragic massive use of lobotomy indicates this (remember the cases in which it was used to 'manipulate' aspects of personality, such as learning difficulties or problems controlling aggression, modifying several other personality traits in the process (Johnson, 2014; Kragh, 2021; Raz, 2013). So personality involves individual traits that influence behaviors, emotions, and thoughts. It includes aspects such as extroversion, kindness, conscientiousness, emotional stability. Personality varies greatly from individual to individual.

Let us begin by saying that the concepts of 'personality' and 'consciousness' are not equivalent or absolutely identical according to the usual usage and definitions in psychology and neuroscience. Let's say for the moment that, in general, consciousness refers to subjective experience, the ability to have inner perceptions, thoughts, and sensations. It is the degree of alertness and sense of existence. Consciousness is a general and shared phenomenon among human beings. The absence of absolute clarity about what personality is and what consciousness is (having at least one definition of both that is accepted by the entire scientific world) gives rise to several positions on what the relationship between them would be.

So, one may have different levels of consciousness, but the same underlying personality (example: an individual with a very calm and

inexpressive temperament may, due to the use of certain drugs, experience altered states of consciousness where he hallucinates and loss of sense of reality. However, his essential personality is not affected). And people with different personalities have a similar degree of consciousness (example: two twin brothers raised in the same environment can develop very different personalities, one extroverted and the other introverted. However, both share the same level of awareness and lucidity about reality).

And what could be the possible relationships between the two concepts?

1. Some regard consciousness as a component or faculty of the mind, but independent of personality. Personality is built on the basis of a previous subjective consciousness or experience.
2. Another view posits that certain personality traits, such as the level of introspection, influence the development of individual consciousness. Therefore, personality partially shapes consciousness.
3. Some theorists argue that consciousness is integral to personality, and the two concepts cannot be completely separated. Individual subjectivity emerges from the unique personality.
4. There are also those who propose that consciousness is an epiphenomenon or by-product of the brain dynamics that give rise to personality. It is not a constituent part but a side effect.
5. From a neuroscientific perspective, consciousness and personality involve overlapping but also distinct neural networks, indicating some degree of dissociation.

It is very likely that there is interdependence between the neural processes that give rise to consciousness and personality, with a certain reciprocal influence, but also retaining some differentiated aspects.

On the question of whether personality is reflected or manifested in consciousness, there are several positions.

1. Some psychological currents hold that important aspects of personality operate in the unconscious and therefore are not fully reflected in consciousness.
2. Other perspectives argue that personality is composed precisely of conscious thought patterns, emotion, and behavior, so it would be reflected in conscious experience.
3. Certain humanist and existential currents propose that consciousness is the main way in which the unique personality of each individual is expressed and experienced.
4. From neuroscience, it is proposed that many of the neural processes that make up the

personality happen at a non-conscious level, so it would not fully manifest in consciousness.

5. Some authors propose middle points, where core traits are consciously experienced, but there are other aspects of personality that operate non-consciously and implicitly.

## II. Some current problems in the study of consciousness.

These are just some of the most important issues facing the study of consciousness.

1. Understand why and how brain processes give rise to subjective experience on the assumption that this actually happens. Although we can understand how the brain processes information and controls behavior, the relationship between neural processes and consciousness remains a mystery.
2. Consciousness implies a subjective quality of experience, such as the color red or sweet taste. Explaining how and why brain states give rise to these subjective experiences is challenging, assuming that this is actually the case. In other words, how does the sense of 'I' and the qualitative experience of consciousness arise from physical brain processes? This is the 'difficult' problem of consciousness.
3. Consciousness involves not only qualitative experience, but also the specific content of what we perceive and think. How is this content generated and represented in the brain? How does it relate to the underlying mental processes on the assumption that this is actually the case?
4. Conscious experience appears to be a unified experience, although the brain is composed of many different parts and processes. How do all these parts and processes integrate to generate a unified experience of consciousness in the event that this is actually the case?
5. Consciousness is related to the ability to make decisions and exercise free will. However, there is debate as to whether free will is compatible with a scientific understanding of the mind and brain (Libet, 2004; Libet, Sinnott-Armstrong, & Nadel, 2011; Sutherland, Freeman, & Libet, 2004). To what extent are our conscious actions really free and responsible? So far, the existence or not of free will is the subject of discussion. Free will may not be an illusion but a priceless human attribute, which can be cultivated and whose development makes our lives more meaningful and purposeful. But it can also be an evolutionary illusion generated by our language to protect the species(s) from many acts that could be consummated using the absence of free will as an excuse.

6. Consciousness raises fundamental questions about its relationship to the brain. How do conscious mental processes relate to brain processes? Are they independent or are they two aspects of the same reality? From this comes a long list of possibilities that correspond to all possible combinations of mind and brain (see below). As there is not yet enough data to decide which is the true one, thousands, thousands and thousands of trees have died to make the paper on which these 'speculations' have been printed.
7. Consciousness involves not only the experience of external objects and events, but also the experience of oneself. Understanding how self-awareness develops and is maintained is another major challenge.
8. Consciousness is a subjective and private experience, which hinders, but does not preclude, its objective scientific study. How can we reliably measure and quantify consciousness? How can we make sure our measurements are accurate and valid?
9. Consciousness in infants and animals: Do they have any level of consciousness? How to determine it experimentally? It is difficult to evaluate it without language.
10. Evolutionary origins: Why and how did consciousness evolve? Does it have any function or is it a by-product? For example, human consciousness probably developed gradually over hundreds of thousands of years of evolution. There was no 'miracle moment'. Compared to other extinct hominin species such as Neanderthals, modern humans developed larger frontal lobes associated with executive functions and self-awareness. This is unclear because modern humans who arrived in Eurasia only show new cultural products after having interbred with Neanderthals and/or Denisovans. The emergence of complex articulated language may have played an important role. It allowed self-reflection, symbolic thinking, and the communication of internal states (the simplest or most primitive). The evolution of autobiographical memory and imagination increased the capacity of projection of the self in time. Some propose that modern consciousness emerged 50-100 thousand years ago during the 'great cultural explosion' when art, ritual burials and other symbols of abstraction appear (this only happens 'massively' after the *Homo sapiens*-Neanderthal-Denisovan-others miscegenation) (Gómez-Jeria, 2017a, 2017b, 2018). The growth of complex social groups may also have played a role by requiring greater awareness of relationships and interactions between individuals.

Let's say in passing that what we inherit from Neanderthals is very important. Here are some brief examples of genes inherited from them and their possible functions. BNC2 gene seems to be involved in skin pigmentation. Introgression of the Neanderthal variant is associated with lighter skin in non-African populations. Gene TLR6-TLR1-TLR10: related to the immune response to bacteria and fungi. It was able to confer survival advantages. OAS1 gene encodes an antiviral protein that responds to viral infections. It was also able to provide greater resistance. MC1R gene: associated with reddish hair color and sensitive to UV radiation. Adaptation to northern environments. FOXP2 gene: involved in speech and language development. It is not known whether it conferred any effect in this regard. AIM2 gene recognizes DNA viruses and initiates immune response. It generates a stronger immunity. EPAS1 gene regulates the response to low oxygenation environments such as at high altitudes. It allowed survival in the mountains (as in Tibet, for example).

### III. The concepts of the field of consciousness and bandwidth.

If we poetically call consciousness 'the theatre of our life' or if we use Gurwitsch's more technical term 'field of consciousness' there is another very important problem that is known but apparently not yet well formulated because we lack a lot of information. This is the relationship between my field of consciousness and what appears to be an enormous domain ('world') existing 'within' me, but beyond my reach, and in which many things occur about which we know little or nothing. We can imagine the field of consciousness as the surface of a sea beneath which exists a huge and very deep ocean. To present an example: at the very 'bottom' of that ocean are those genes that force us to reproduce and for which we obtain the tremendous experience of orgasm as an 'evolutionary prize' (that we have been able to separate these two processes is interesting). The bad thing about that, and that any adult can calculate, is the enormous amount of time we spend on that activity, consciously and unconsciously (and without free will, although we do not realize it). Another 'sector' of the ocean is what I call the 'garbage can' partially discovered and described by Freud.

In this field of study there are questions to be answered such as: what is the process or what are the processes by which some phrases suddenly emerge in my field of consciousness, especially when the subject to which they refer was not the subject of my attention? What exactly happens when I am sleeping with dream activity and in the field of my 'asleep' consciousness appear various images, sounds, sensations, and emotions, etc.? Why those and not others? It seems that it will be easier and faster to fully know the oceans that exist on Earth than the one I mention here. In any case, and assuming that we do not become extinct, sooner or later we will and finally that region of knowledge will

be free of charlatans, tarot readers, astrologers, exorcists, and all kinds of feathered people who live at the expense of others.

The expression 'field of consciousness' was developed by Gurwitsch (Gurwitsch, 1957, 1964; Gurwitsch & Zaner, 2010). He proposed that consciousness has a field structure, similar to an electromagnetic field, encompassing both the perceived object and the subject's own perceptual activity. The field of consciousness is a dynamic whole where each part is related and determined by the other parts within the perceived field. He distinguished between the '*theme*' or main focus of attention, and the '*margin*' or less conscious perceptual background. Both form an interdependent unit. The field of consciousness has a '*horizon*' that delimits the boundary between what belongs to the perceptual field and what is left out at any given moment. Within the field there are 'microsystems' of meaningful interactions between parts of the whole, which can attract attention and become new themes or focuses. The field is not fixed, but constantly changing as new topics, interactions, and boundaries emerge. It is a self-regulating system in continuous movement. *So, consciousness arises from the dynamic relationships between the parts within the field and cannot be reduced to isolated processes. It is a holistic phenomenon.* Without beginning to consider the field of consciousness as an existing entelechy *per se*, we can observe that what 'appears' in it are what appear to be external contributions to our body (which 'penetrate' it through the senses) and others that have an indeterminate origin, but which is 'internal': images, sounds, memories, words of the internal language, smells, etc.

Regarding the material that appears in the field of consciousness, for this to happen several neural processes must be activated. First, sensory information captured by the sense organs is processed and analyzed in specific brain areas. For example, the visual cortex processes visual stimuli and the auditory cortex processes sounds. Then, that information is transmitted to associative areas where it is given meaning. There internal representations are activated, that is, the concepts, words, images, or memories that we have stored in neural networks. *Subsequently, significant representations are temporarily maintained in working memory, allowing us to be aware of them.* Working memory involves a distributed network of prefrontal and parietal areas. What we do not yet know are the reasons why that internal process begins that finally crystallizes in the material that appears in the field of consciousness. As for the purely 'internal' source material, this seems to be constituted by memories (memories in the form of images, sequence of images, vivid memories of smells, tastes, etc.) and 'internal language'.

Some curious person might pose this question: And why do only what emerges emerge and no other material emerge? To this we can answer that this is a poorly formulated question. Indeed, it is impossible to know whether or not there were some that did not emerge, because they did not emerge! We don't even know if they existed. This field needs a lot more research.

It is possible to associate the concept of 'bandwidth' with the field of consciousness. It is also possible to associate another concept such as 'processing speed'. Some examples are the following ones. A study by Marti et al. provides neural evidence of a shared mechanism of restriction in the conscious processing of temporally contiguous visual information (Marti, Sigman, & Dehaene, 2012). There is a common cortical 'bottleneck' that limits conscious processing when information arrives very quickly in sequence. The authors propose that this temporal limitation originates because the prefrontal cortex is key to integrating and consolidating perceived conscious representations. Luck and Vogel's review article discusses research on visual working memory capacity (Luck & Vogel, 2013). These aspects can be highlighted. Visual working memory has a capacity limit of 3-4 simple objects. This limit is remarkably consistent between individuals. This ability is associated with the activity of neurons in the prefrontal and parietal cortex during the maintenance of visual information. Factors such as cognitive load, complexity of stimuli and training can slightly improve visual memory capacity. There are some individual variations measured that correlate with differences in the functioning of frontoparietal networks. Models are proposed on how gamma oscillations and coupling between neuronal groups might underlie active storage in working memory. Huang and Pashler present a computational model of how selective visual attention works (Huang & Pashler, 2007). The authors propose that attentional selection operates through a Boolean map that filters visual information according to cognitive demands. The model assumes that visual objects compete globally for representation within a spatial map of salience. Only objects that satisfy the selection Boolean filter gain access to additional cognitive processes. This Boolean map theory reproduces several known empirical effects on visual attention, such as the search set effect. The model also generates novel predictions that are experimentally confirmed in visual search tasks. Cowan presents a critical analysis of the evidence for the capacity limit of short-term memory (Cowan, 2001). It summarizes several studies that find that working memory for unrelated material (such as random words or letters) has a maximum of about 4 items or 'chunks' (coherent cognitive unit of information). Cowan discusses theories as to why this 4-element boundary emerges. This would be related to patterns of brain activation. It also analyzes how the grouping in chunks and the type of essay (verbal, visual, etc.) influence that

limiting capacity. It also addresses individual variations in the magic number of items remembered and associated cognitive factors.

The explanation for these facts is that they are evolutionary products that allowed us to be where we are today. When our ancestors were prey, they needed a high and fast capacity for selective detection of possible predators, as well as a good capacity to process alternatives for immediate responses to these threats.

These processing limits are important when dealing with topics such as retrieving memories (see below).

#### IV. Towards a definition of 'consciousness'

I think that the readers who have read about the subject will have noticed that, in many texts, articles, Web pages and the like, the most important thing is missing: the definition of consciousness. Once we have a scientific definition acceptable to all or almost all we will be able to deal not only with the problems mentioned above, but to examine what have been presented as being various 'aspects of consciousness'. A short list of what some mean by conscience is this.

We understand that consciousness, broadly speaking, is the state of mind in which a person is aware of their own sensations, thoughts, emotions, and the environment around them. Consciousness involves being awake and alert and having a subjective experience of the world. Consciousness is a subjective and highly individual experience and can vary significantly between people due to factors such as culture, education, beliefs, genetics, mental health, and other personal aspects. So, *this author, the reader reading this, a serial killer, a CIA agent who murders civilians with drones, an individual who practices domestic violence and a pedophile priest have consciousness as just defined. This is very important.* It is possible to make some subdivisions for a better analysis, such as those that follow, and that do not change for the moment anything of what has just been affirmed.

1. **By phenomenal consciousness:** We will understand the subjective experience of having sensations and mental states. It is the subjective quality of consciousness, such as the perception of colors, sounds, tastes, smells, and emotions. This phenomenal experience is unique to each individual and cannot be directly shared or experienced by others. For example, if we gather 100 people and show them a huge flag that for us is red, surely they all say it is red, even if there is a colorblind in the group. And if we separate them and show them an atlas of colors with many shades of 'red' and ask them to indicate 'the red they saw'

it is certain that there will be no unanimity about it.

2. **By self-awareness:** We understand the ability of an individual to be aware and to have knowledge of himself as a being separate from others. This involves an understanding of one's identity, personal characteristics, history, emotions, and thoughts. Self-awareness allows a person to have a reflective perspective on their own existence.
3. **By object consciousness:** We mean the ability of an individual to be aware of objects and events in the external world, as well as perceptions and experiences related to them. It includes the ability to perceive the environment, recognize and understand objects, and respond to external stimuli.
4. **By altered consciousness:** We mean a state of consciousness that differs from normal consciousness. It can be caused by different factors, such as the use of psychoactive substances, neurological disorders, spiritual practices, or abnormal mental states. Alterations in consciousness may involve changes in perception, cognition, emotions, or sense of identity. *This should be the first point to analyze because the term 'consciousness' suffers from a vagueness of definition (intensional vagueness).*

For example, points 1-3 just mentioned may be common to all human primates. If we do a test with YES or NO as the only possible answers to detect the existence or absence of the types of consciousness mentioned in points 1-3, this author, the reader, a serial killer, a CIA agent who murders civilians with drones, an individual who practices domestic violence and a pedophile priest would give the same answers. A finer test to identify *content* related to points 1-3 would be answered with lies by a serial killer, a CIA agent who murders civilians with drones, an individual who practices domestic violence and a pedophile priest (and the reader if he belongs to any of these groups).

Point 4, referring to what is called 'altered consciousness' is the one that leads to problems. Technically, the term 'altered consciousness' refers to a state of consciousness that differs from normal or everyday consciousness.

Let's look at the matter of so-called 'altered consciousness'. It is defined in terms of a certain 'normal consciousness'. Therefore, it is reasonable to start with some definition or characteristics of what is called 'normal consciousness'. Here is another definition.

*'Normal consciousness' is a state of alertness and mental clarity in which a healthy adult person is awake, aware of their surroundings and able to interact*

*with it in a coherent and adaptive way. In this state, a person has a continuous and fluid experience of his subjective and objective reality. The requirement of 'healthy' implies that we are referring to people within neurological and medical parameters considered normal, in which a habitual state of intact consciousness is presumed. The presumption of a shared 'normal consciousness' is based more on theoretical and correlational extrapolation, not on direct, verifiable observation. More research is required to confirm whether subjective consciousness is truly the same in all individuals.*

The truth is that we have no direct way of knowing whether the subjective experience of 'normal consciousness' is exactly the same in all healthy adults. There are several points to consider. Consciousness is inherently subjective and qualitative, it cannot be measured or compared directly from person to person. We depend on verbal reports. There are individual variations in personality traits, temperament, cognitive styles, etc. that could subtly affect the phenomenology of consciousness. We cannot rule out neuroanatomical differences or brain activity between individuals that give rise to nuances in consciousness. Verbal reports on conscious experience are limited by language and may not capture the deeper aspects. The comparisons assume that, under similar external conditions, healthy humans have a common brain structure that gives rise to consciousness in an equivalent way. *But it can certainly be the case that what is usually considered 'normal consciousness' in one individual is actually an altered state of consciousness in another (according to the definitions of 'normal' and 'altered').*

That is, it is not enough to cross paths with some *Homo sapiens* on the street who seem to have a 'normal' external behavior to deduce that their normal state of consciousness is the same as ours or that of the majority. In theory it is relatively easy to detect some adults when they are not in their state of 'normal consciousness'. For example, with neurological or psychiatric conditions that affect consciousness such as brain injuries, epilepsy, schizophrenia, mood disorders, dementias, etc., with effects of drugs, medications or toxics that alter the normal state of consciousness, with infectious diseases or inflammatory processes that compromise the central nervous system, with head trauma, strokes or other conditions that damage brain areas related to consciousness, with extreme sleep deprivation or other environmental factors that cause transient alteration of consciousness, etc. In other cases, such as a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence and a pedophile priest we are condemned, for the moment, to not be able to detect them in time.

And, to make matters worse, here is a short list of 'altered' states of consciousness. It is not known if some names refer to the same phenomenon and there is

no clear definition of many of them (Gómez-Jeria & Madrid-Aliste, 1996) alcohol intoxication, opiate intoxication, psychosis, delirium, dementia, sleep (sleep alternates between REM stages, with intense brain activity, and non-REM of less activity but physically important, throughout cycles during the night), coma, vegetative state, state of minimal consciousness, epilepsy, epileptic absences, epileptic seizures, migraines with aura, hypnosis, trance, meditation, religious ecstasy, sensory deprivation, hallucinations, mystical enlightenment, nirvana, Samadhi, outburst, drunkenness, sleepwalking, narcolepsy, cataplexy, sleep paralysis, lucid dreaming, 'out-of-body' experiences, 'near-death' (Gómez-Jeria & Saavedra-Aguilar, 1994; Saavedra-Aguilar & Gómez-Jeria, 1989) psychedelic drug-induced states, depersonalization, derealization, dissociative identity disorder, dissociative disorders, conversion disorders, peak experiences, restricted states of consciousness, morning hypnagogia, daydreaming, dreaming, stupor, creative, hyperalert, lethargic, hysterical, fragmented, regressive, expanded, liberated and perhaps many more.

**Wakefulness and alertness:** In normal consciousness, a person is awake and conscious, not under the influence of drugs or disorders that alter their waking state. It is fully attentive to its environment and able to respond to external stimuli appropriately. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

**Continuous subjective experience:** In this state, the person has a continuous and uninterrupted subjective experience. You are aware of your thoughts, emotions, bodily sensations, and sensory perceptions, and can follow the flow of your inner experience consistently. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

**Temporal and spatial orientation:** Normal consciousness includes adequate temporal orientation (awareness of the present, past, and future) and spatial orientation (awareness of the physical environment and one's own body's location in space). This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

**Self-awareness:** An important feature of normal consciousness is the ability to have awareness of oneself as an individual separate from others. The person has knowledge of his identity, personal characteristics, history, social roles and can reflect on his own existence. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

**Coherence and continuity of thought:** In normal consciousness, thoughts and mental processes are organized and connected in logical and coherent ways. The person can follow a line of thought, maintain attention, and change focus in a voluntary, controlled manner. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

**Autonomy and free will:** Normal consciousness involves the ability to make decisions and exercise free will consciously. The person has a sense of agency and responsibility for their actions, based on their ability to reason and act in accordance with their own intentions and values. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

In the 1980s, Benjamin Libet conducted a series of experiments in which he analyzed the brain activity and subjective perception of subjects as they performed voluntary movements (Libet, 2004; Libet *et al.*, 2011; Sutherland *et al.*, 2004). One of his most famous experiments involved asking participants to move their hand whenever they wanted, while recording brain electrical activity. Libet found that there was a brain action potential that preceded the subject's awareness of wanting to perform the movement. In other words, movement-associated brain activity was initiated before participants were aware that they had made the decision to move their hand. This led Libet to raise the idea that conscious decision-making could be influenced by unconscious brain processes that occur before we are aware of our choices. These findings generated debates and reflections in the scientific and philosophical community about the nature of free will. Some argue that, if unconscious brain processes precede our conscious decisions, then free will as traditionally understood might be limited or questioned. Others argue that the relationship between brain activity and consciousness is not yet fully understood, and that free will is not necessarily in conflict with the results of Libet's experiments.

**Social connection:** Normal consciousness also involves the ability to relate to others empathically and consciously (Pina & Gontier, 2014). The person can understand and respond to the emotions and mental states of others and engage in social interactions adaptively. This author, the reader, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence, and a pedophile priest all seem to meet this criterion.

There are other aspects designated as 'conscience', such as the so-called '**moral conscience**' (an individual's ability to discern between what is ethically right and wrong and act accordingly. It

involves an awareness of values, ethical principles and social norms, and the ability to make informed ethical decisions) and so-called '**ethical awareness**' (awareness of our actions and their impact on others, guided by moral principles and values. It involves a reflection on the moral implications of our decisions and behaviors, and consideration of the rights and well-being of others.) These two definitions are highly subjective since the so-called values, ethical principles, social norms, rights, and duties of life in groups are very variable and depend on the historical moment and geographical place. The latter is true, but if we consider the same geographical place and the same historical moment (today's West), this writer, a serial killer, a CIA agent who kills civilians with drones, an individual who practices domestic violence and a pedophile priest do not have the same moral conscience, nor the same ethical conscience. Unfortunately, there are still no reliable tools that allow us to know them in each case.

Before closing this section, let's mention that there are some animals that could have states of consciousness (mentions of dream states were removed). Dolphins (appear to have personal identity, self-awareness), elephants (mourning for their dead, possible self-recognition), non-human primates (limited self-awareness, intentional behaviors), birds (dance synchronization in flocks, ritual courtship), octopuses (use of tools, problem solving), dogs (emotional expressions, recognition of individuals), rodents (cyclic states of brain activity and inactivity), reptiles (states of stillness with reduced metabolism) and fish (coordinated flight reactions in schools) (Dawkins, 1998; Peña-Guzmán, 2022; Veit, 2023). Some of them are debatable.

## V. Consciousness, mind, psyche.

For completeness of this text it is necessary to present some similarities and differences between the concepts of consciousness, mind, and psyche.

**Consciousness:** Consciousness refers to the state of mind in which we are aware of our own sensations, thoughts, emotions, and the environment around us. It is the subjective and phenomenal experience of reality. Awareness involves being awake, alert, and having an ongoing conscious experience. It is a state in which we can have knowledge of ourselves and the world.

**Mind:** Mind is a broader term that includes not only consciousness, but also cognitive, emotional, and mental processes in general. The mind encompasses the set of mental activities that occur in the brain, such as thinking, perception, memory, imagination, and reasoning. *It is the seat of conscious and unconscious psychic processes.* The mind is responsible for processing information, generating ideas and mental representations, and guiding behavior.

**Psyche:** The concept of psyche is most associated with psychology and philosophy. It refers to the



deepest and most complete aspect of the mind, which includes not only consciousness and mental processes, but also unconscious and subconscious aspects. The psyche relates to the totality of a person's mental and emotional life, including both conscious and unconscious aspects. Some argue that it is the immaterial and spiritual component of the human being.

**Similarities:** All concepts (consciousness, mind, and psyche) refer to the realm of an individual's mental experience and activity. All three concepts are related to subjectivity, that is, the unique experience and perspective of each person. All of them involve cognitive, emotional, and mental processes. In short, all three involve cognitive processes, perception, subjective experience, thought, emotions, senses, higher intellectual functions, connection between physical and mental states, internal representations of reality.

#### Differences:

**Differences between consciousness and psyche:** Consciousness involves present subjective experience, psyche deep internal processes, consciousness is the state of immediate alertness, psyche the complex unconscious structure of the mind, consciousness focuses on perceptions of the moment, psyche on ingrained internal motivations, consciousness implies a first-person perspective. The psyche has non-conscious components, consciousness is responsive to the environment, the psyche determines internal drives, consciousness integrates information from the here and now, the psyche includes the personal history of the individual, consciousness is a neural correlate, the psyche has a spiritual component.

**Differences between consciousness and mind:** Consciousness focuses on present subjective experience, mind on broad cognitive processes, consciousness involves immediate feelings, mind capabilities such as thinking and reasoning, consciousness is responsive to the present moment, mind includes abstract representations, consciousness is a state of alertness, mind a system of cognitive functions. Consciousness implies a first-person perspective, the mind can operate with objective logic, consciousness integrates perceptions of the now, the mind involves imagination and prospection as well, consciousness is a dynamic flux, the mind manipulates stable representations, consciousness is a central phenomenon for identity, the mind does not necessarily define the self.

**Differences between psyche and mind:** The psyche involves unconscious processes, the mind includes conscious operations, the psyche determines internal drives, the mind allows rational thought, the psyche is linked to the spiritual, the mind to the cognitive, the psyche houses repressed contents, the mind manipulates manifest ideas, the

psyche forms the deep structure of the personality. The mind the objective intellectual functions, the psyche is the product of biographical development, the mind performs definite tasks, the psyche is the source of irrational emotions, the mind generates logical thought, the psyche is responsible for dreams, the mind controls wakefulness, the psyche is the core of the individual, the mind a set of capacities.

#### VI. The mind-brain problem

It is usual to divide philosophical positions on the subject of the mind-body (or mind-brain) relationship into monistic and dualistic. This is the standard distinction in philosophy of mind. Below are some propositions in this regard (Churchland, 1986, 2002; Dardis, 2008; Demarin, 2020; Fei, 2023; Gordon, 2022; Grossberg, 2021; Klinge, 2020; Morris, 2019; Schneider, 2008; Tomasi, 2020; Westphal, 2016).

**Dualistic:** The mind and brain are two distinct and separate entities. It can be subdivided into:

1. **Ontological dualism (or Cartesian dualism):** Formulated by René Descartes in the seventeenth century, it is the traditional form of dualism. He holds that the mind (*res cogitans*) and the body (*res extensa*) are separate and fundamentally distinct substances. The mind is immaterial, without spatial extension, while the body is material and occupies space. The mind is indivisible, it does not follow physical laws, the body does. This radical distinction marked modern Western philosophy.
2. **Property dualism:** The mind and brain have radically different properties. The mind possesses properties such as qualitative subjectivity, intentionality, unity of consciousness, while the brain has physical properties such as mass, spatial extent, location, material texture. Mental properties are not reducible to physical properties, they have a completely different nature. A thought is not the same as a neural discharge. This irreducible difference between mental and cerebral properties indicates that they belong to distinct ontological domains. Thus, from the dualism of properties, the mind and brain are two different linked entities, as they present two sets of divergent properties that do not overlap. Although they interact, they retain their own radically different spheres. It is not a distinction of appearance, but ontological at the level of defining characteristics. The properties of each reveal its independent nature.
3. **Category dualism:** The mind and brain belong to two completely different ontological categories. The mind corresponds to the category of the mental, the experiential, the

immaterial. The brain belongs to the category of the physical, the material, the extensive. These are two mutually exclusive categories. The mental and the physical form radically different domains, with properties and laws of their own. The same entity cannot simultaneously have both physical and mental properties, these belong to separate categorical spheres. Therefore, since the mind possesses mental properties and the brain physical properties, they must be two types of entities belonging to distinct ontological categories. They cannot be reduced to each other because they are conceptually divergent categories. The relationship between mind and brain is therefore between members of distinctive categories, not within the same category.

4. **Epistemological dualism:** There are two radically different ways or methods to know the mind and the brain. To study brain processes we use the objective scientific method, such as empirical observation, experimentation, quantitative measurement. But this method is inadequate for studying subjective mental phenomena, such as qualitative experiences, qualia, introspection, etc. To examine the mind requires a subjective approach in the first person, through one's own introspective experience. This divergence in the pathways of knowledge appropriate to the mind and brain indicates that they are distinct entities, requiring distinct epistemologies to be understood. The mental and the physical are known through radically different methods, which reveals that they have a different ontological nature.
5. **Dualism of criteria:** The mind and brain are defined and verified through radically different criteria. Mental states are characterized by criteria such as qualitative subjective experience, privileged first-person access, phenomenal correlates, etc. Instead, brain states are characterized by objective criteria such as neural location, synaptic activity patterns, neurochemistry, etc. They do not share common definition criteria. For example, a memory has different subjective verification criteria than a neural substrate of memory. This divergence in the criteria for defining and contrasting the mind and brain indicates that they are of a very different character. The fact that radically different criteria are applied to determine their respective states shows that they are ontologically distinct. Divergent criteria reveal independent domains.
6. **Interactionist dualism:** The mind and brain are ontologically distinct substances that can causally influence each other. Mental states can generate physical effects in the brain, for example, when a desire causes muscles to

move. Similarly, brain states can generate mental effects, such as when a blow to the head causes the experience of seeing lights. This capacity for bidirectional causal influence is only possible if the mind and brain are distinct entities. If they were identical or reducible to each other, they could not interact causally in that way. The fact that there is causal interaction between the mind and the brain proves that they are independent substances capable of impacting each other.

7. **Parallelistic dualism:** The mind and brain are two parallel substances or realities that evolve in perfect correlation, but without causally influencing each other. When mental events occur, there is always a physical brain correlate, and vice versa. But not because there is a causal relationship, but because they are constantly synchronized by some predetermined mechanism. Changes in the mind only accompany changes in the brain, without generating them directly. Similarly, modifications in the brain are reflected in the mind without provoking them. Mind and brain follow coordinated but independent courses, without direct mutual interaction. This synchronization shows that they are distinct entities, because if they were identical they would not require coordination but would change in unison by themselves. In short, the perfect parallelism between mind and brain implies that they are ontologically diverse, otherwise they could not be so systematically coordinated.

### Monism

1. **Materialism (type of materialistic or physicalist monism):** Materialism states that mental processes are actually brain processes, they do not exist outside of neural activity. The mind emerges from the complex brain, it cannot exist separately from a physical substrate. Subjective thoughts, feelings, and experiences originate entirely from neural patterns. It rejects any immaterial or non-physical element in the mind. This is the result of biochemical and electrical interactions. The laws of physics that govern matter apply to mental processes as well. It seeks to explain mental phenomena such as memory, perception, reasoning, in terms of brain mechanisms. It includes variants such as behaviorism, functionalism, and mind-brain identity theory. It has been criticized for not being able to fully explain the subjective nature of conscious experience. In short, materialism sees the mind as an emergent phenomenon of the physical brain, reducible to neural activity.

2. **Idealism (type of idealist or mentalist monism):** Holds that reality is constituted by mind, ideas, and consciousness, as opposed to matter. As for the mind-brain relationship, he states that the mind is the basis of everything, and the brain is a mental and subjective construction. Ideas and mental contents are the only reality, matter and physical objects are projections of consciousness that have no independent existence. From this perspective, the brain and the material world are products of universal mental processes, not the other way around. Thoughts, perceptions, and ideas make up reality, while the brain is simply part of mental experience. Even the laws of physics ultimately derive from transcendental mental principles. In short, for idealism the mind is the ultimate source of reality, creating the illusion of an external physical world that does not really exist objectively but as a mental construct. The brain is thus a phenomenon subject to the conceptual structures of consciousness.
3. **Neutral Monism:** Neutral monism holds that the mind and brain are not separate substances, but that both are composed of the same 'neutral substance' that is neither strictly mental nor physical. From this perspective, mind and brain are two sides of the same coin, two ways of looking at the same underlying entity. The mental and the physical are reduced to a common substrate from which they emerge as distinct manifestations. That substrate is neither pure ideas nor raw matter, it is a neutral fundamental reality that gives rise to mental experience and brain states. There is no ontological duality between mind and brain, because deep down they are built from the same basic elements that do not belong definitively to the mental or physical realm. Thus, neutral monism unifies mind and brain by conceiving them as derivatives of the same underlying principle that is neutral with respect to the distinction between the mental and the physical.
4. **Epiphenomenalism:** States that mental states and processes are epiphenomena or by-products of brain processes, without having a causal effect on them. From this perspective, the neural processes of the brain generate the phenomena of conscious experience in a unidirectional way, but the latter do not cause any kind of physical effect in turn. Sufficiently complex brain activity produces the emergence of mental states, but it is only an accompanying phenomenon without causal powers. The mind observes what happens in the brain but is powerless to affect the underlying physical processes. Therefore, epiphenomenalism claims that all mental functioning is a linear consequence of brain processes while the mind is only an ineffective by-product with no capacity for feedback. The brain generates the illusion of an active mind when in reality it is an epiphenomenon without causal agency.
5. **Double aspectism:** Proposes that the mind and the brain are two aspects or facets of the same underlying reality. The mental and the physical are different manifestations or qualities of the same neutral process. The mind and brain seem separate entities, but deep down they are like two sides of the same coin, two forms that take a common substrate. This neutral substrate is expressed in turn mentally and physically, as consciousness and neural activity. There is no reductionism because it is not claimed that one is more fundamental, they are two equally primary modes of expression. Thus, according to the double aspectism, mental and cerebral events are the double aspect of a single complex process that has both subjective and objective nature inherently. It is not dualism because they are not separate substances, nor monism because it is not reduced to each other, but two facets of something deeper.
6. **Occasionalism:** States that there is no direct interaction between mind and brain, its coordination is due to the continuous intervention of God. When a thought occurs, it is God who produces the corresponding physical brain modification so that they match. Likewise, every neural activity is an occasion for God to generate the appropriate thought or mental perception. In this way, mental and brain changes do not cause each other, but are synchronized by the occasional divine action that makes them coincide. God must intervene on every occasion so that a mental process is accompanied by the proper brain process. Thus, occasionalism denies any direct causal power between mind and brain, attributing their apparent relationship to the continuous divine activity that harmonizes them. The interaction is only occasional, not necessary, mediated by God in each moment to give the appearance of coordination.
7. **Phenomenalist monism:** Holds that reality is ultimately constituted by mental phenomena or conscious experiences. Both matter and physical objects are reduced to combinations of perceptions, sensations, and ideas. From this perspective, the brain is also a construct of mental phenomena, it has no independent physical existence. Brain processes are just groups of sensory experiences associated in a certain way. Even physical laws ultimately come from observed relationships between mental phenomena. Thus, phenomenal monism

asserts that supposed states of the brain are actually mental states, and the mind-brain correlation reflects only relationships between conscious experiences. In short, this monism reduces all reality to the basic components of subjective mental experience, including the apparent physical matter of the brain that dissolves into conscious phenomena.

8. **Eliminativist monism:** Holds that the concepts of mind, consciousness and mental states will eventually be discarded and eliminated from science as non-existent entities. From this perspective, terms such as thoughts, beliefs, desires do not refer to anything real in the brain, they are residues of false intuitions about human psychology. The only real thing is material brain processes, which can be explained without the need to postulate the existence of a mind. Advances in neuroscience will demonstrate that there is no mental activity other than neural activity. Thus, eliminativist monism predicts that science will completely eliminate any notions of the mental by understanding that the brain functions perfectly without the need for mental states. There is no correlation between mind and brain because there is really no such thing as a mind with internal states. There is only material brain activity.

Importantly, some of these perspectives may overlap or be compatible with each other, while others may be mutually exclusive. On the other hand, one cannot discern with absolute certainty which of all these possibilities is correct. Each explanation seems to have convincing arguments, but also weaknesses and lack of definitive evidence. Faced with this intellectual challenge, I decided only to expose in detail some of the intricate twists and turns of this puzzle that has revealed and still reveals countless brilliant minds. I dare not prematurely opt for one hypothesis or another. And it is at this point where it must be affirmed that it is illicit to use the scientific method as a tool to decide on which position is the 'correct' or the 'most correct' because this is neither the objective of this intellectual tool, nor the way to use it.

What to do with all these possibilities? Let us relate the story of the Gordian Knot (see Arrian and Plutarch). The origins of the knot date back to the eighth century BC, when Gordius became king of Phrygia (Anatolian region, in present-day Turkey). Tradition has it that one day a cart tied to a yoke, both matted with dogwood bark (*Sorbus aucuparia*), stopped in the middle of the royal square. No inhabitant could untangle the complicated knot, so they consulted an oracle, who predicted that whoever achieved it would be the future ruler of Asia. Gordio, a farmer, accepted the challenge and, to the astonishment of those present, undid the elaborate mooring. He was thus proclaimed

king and in honor of the event, he dedicated the chariot to Zeus. The intricate knot then remained part of the treasures of the temple of Gordius. All those who tried to undo it failed, until the arrival of Alexander the Great in 333 BC. Impatient before the skein, Alexander drew his sword and with an accurate slash split the knot. That night, according to records, there was a heavy storm and Alexander knew that the oracle had been fulfilled. He then set out on his legendary conquests in Persia, Egypt, and India. The legend of the knot endures as a metaphor for the human ability to nip seemingly indecipherable challenges in the bud.

Then, the Gordian Knot happens to symbolize here the mind-brain problem, a very complex and difficult problem to solve. This problem needs a new Alexander (keeping the proportions of course) who, with the sharp sword of the scientific method, 'cuts' this knot. Only through a rigorous process of hypothesis formulation, experimentation, verification, and reproducibility will humanity ever be able to corroborate the ultimate solution to this ancient riddle. That is why the academic community should unite in a collective search guided by intellectual curiosity and passion for knowledge.

In the next section we will see that there is a 'place' within us that seems to be accessible to introspection and partial or total recovery of what is 'inside'. It is the memory.

## VII. Memory

I suppose that, as I do, writing fragments of thoughts is something that many do in order to develop some themes in the future. This fragment of Nietzsche has caught my attention: *'Actually, I should have around me a circle of deep and tender people who protect me something from myself and who also know how to rejoice me: because for someone who thinks things like I have to think, the danger of destroying himself is always very close'* (Nietzsche). On January 3, 1889, Nietzsche suffered a mental breakdown. He had a stroke (it was not his first) during the night of August 24-25, 1900, and died around noon on August 25. My idea is that this collapse is perhaps due to a clear awareness that he had reached a limit beyond which he could not pass. I mention this because there is empirical evidence strongly suggesting the possibility of the occurrence of a collapse or mental chaos in certain very stressful situations not associated with brain damage.

This section is to show an example of what can be done starting with some verifiable facts, continuing with some ideas (which are not yet known if they are true or not), and ending with some experimentation. 'Verifiable' facts correspond to the available information that suggests that with the use of some primitive techniques (psychoanalysis, hypnosis) or with the consumption of certain substances it is possible to emerge in the field of consciousness memories that

seemed to be stored and that were not normally accessed. It is necessary, of course, to corroborate with witnesses the reality of these memories, especially those that correspond to the period when language was not yet possessed. To this can be added that some occasional stimuli can suddenly emerge in the field of consciousness memories of which nothing was known of their existence. See my article on Proust (Gómez-Jeria, 2017c).

The original idea is then the recovery of *all the memories and sensations* that are held in the 'memory banks' (the reasons for this are not only scientific, but also philosophical). The first idea I had was to assume that there are sensations or memories 'acquired' during the stay inside the womb before the senses and memory structures developed (Type I), sensations or memories acquired within the womb when the senses and memory structures had already developed (Type II), memories acquired after birth but before possessing language (Type III), others obtained during the period in which language was learned (Type IV) and finally others acquired when natural language was already handled (Type V). Perhaps it is possible to add some other subdivision.

The study of memory in the human fetus is a developing area of research and there is still much to discover. However, fetuses have been shown to possess certain rudimentary memory systems. The following facts about fetal development, and which seem to be true, were taken from non-scientific sources (by 'scientific sources' we mean scientific articles that do not contain some kind of falsification) because the model presented here is not yet scientific, but it is necessary that the reader has some elements that indicate that there is some possibility of improving it so that in some future it will be (Buonocore & Bellieni, 2017).

1. From the third trimester of pregnancy, fetuses can respond to tactile and vestibular stimuli. They may show reflex responses, such as thumb sucking or body movements in response to tactile stimulation or jerky movements. These responses suggest that fetuses have a tactile and vestibular form of memory in which they can remember and recognize certain stimuli.
2. Some essential aspects about fetal ear development are: Week 16. Nowadays, it is clear that a fetus responds to sound stimuli from this week of gestation. Of course, at the moment his ear at the structural level is not mature. Week 25. The hearing organ begins to become functional. Weeks 29 to 32. The maturation of the inner ear is completed. From that milestone, the baby begins to hear through the amniotic fluid the sounds inside his mother's body. It perceives a heartbeat in the first months of extrauterine life and also the

work of other organs (rhythm of breathing, current of blood flow, bowel sounds). He listens to his mother's voice (Martinez-Monche, 2023; Moreno & Entrevista, 2023). At week 24 the fetus is able to pick up sounds from outside. *Imprinting* is the memory that the baby's body has about the fetal environment that surrounded it during the pregnancy period (Cudi, 2023).

3. It has been discovered that fetuses can have a form of gustatory and olfactory memory. Studies have shown that fetuses may respond differently to tastes and smells presented to them before birth. For example, fetuses have been observed to swallow more when offered sweet-tasting amniotic fluid, compared to bitter-tasting amniotic fluid. The sensations created in the fetus are the result of what it smells and tastes in the amniotic fluid, according to the foods and substances consumed by the mother, and which will also permeate breast milk (González, 2023). These sensations have effects on heart rate and fetal movements (Rodríguez, 2023). Fetuses at 30 weeks retrieved information in the short term and from 34 weeks were able to keep the stimuli in memory for at least four weeks (Long, 2023).

In summary, although the memory systems in the human fetus are rudimentary, they have been observed to possess basic tactile, vestibular, auditory, gustatory, and olfactory memory capacities. Understanding memory in the fetus is a growing field and more research is required to fully understand these processes. These new results should be incorporated into this research proposal.

The context and cues associated with a memory can play a crucial role in its retrieval. Studies have shown that memory retrieval may be more successful when the context or cues present during the original event are recreated. This is the reason for simulating the possible environment. The problem here is that the environment of each case is individual and that there are no known ways to determine it scientifically in each of them. That is why the theory holds that memories and sensations of type I and II could be recovered by preparing an experimental setting that simulates as perfectly as possible the interior of the mother's womb. Nothing better for this task than to use a sensory isolation tank (also called flotation tank or sensory deprivation tank) like the one used by physicist Richard Feynman, who made experiments with marijuana and ketamine (it is not clear if he got any benefit). For the sensations or memories of type I one has the idea of making them 'pass' (if there are any or some) into the field of consciousness of the experimentalist (Gurwitsch, 1957, 1964; Gurwitsch & Zaner, 2010). The object of this is that they change to

the category of 'memorable' memories, whether they are good or bad. And, as it becomes so, its effects can be managed. The question here is what must be implemented within the isolation pond to minimize the field of consciousness so that it serves only as a 'receiver' of eventual memories and sensations and prevent type III, IV and / or V materials from disturbing it. Perhaps the sound environment of the subject could be simulated, and/or tactile effects, smells and/or tastes could be also simulated.

Note that the ability to retrieve forgotten memories is a complex topic and still the subject of research in the field of psychology and neuroscience. Not all experts agree on the reliability and validity of certain memory retrieval techniques, especially those involving hypnosis or memory retrieval therapy. Memory can also be subject to distortions and false memories (the latter defined as a *phenomenon in which someone remembers something that did not happen or remembers it differently from the way it actually happened*, Wikipedia).

Let's briefly recall how little is known about the memory systems of the adult human (Ghosh, Konar, & Rakshit, 2021; Lexcellent, 2019; Manrique & Walker, 2017; Novick, Bunting, Dougherty, & Engle, 2020; Otani & Schwartz, 2019; Radvansky, 2021). One is sensory memory, which retains short-lived sensory information from the senses, such as sight and hearing. The information is stored for a few seconds before fading or moving into short-term memory. Another system is short-term memory (or working memory), which stores information temporarily while it is being actively used. It has limited capacity and can hold information for a few seconds or minutes. Short-term memory is critical for attention, reasoning, and decision-making.

Long-term memory is the system that stores information most permanently and is the main target of this work. It is divided into two main types:

1. Explicit or declarative memory that refers to conscious and deliberate memories, such as autobiographical events, factual knowledge, and consciously learned skills. It is subdivided into episodic memory, which stores personal experiences and events in a spatiotemporal context, and semantic memory, which stores general knowledge and concepts.
2. Implicit or non-declarative memory, which contains knowledge and skills acquired unconsciously or implicitly, such as riding a bicycle, driving a vehicle, playing a musical instrument, or learning motor skills. *It does not require conscious effort to retrieve stored information.*

Emotional memory, whose system is related to long-term memory, but focuses on the retention of

intense emotional experiences. Emotional memories tend to be more vivid and lasting because of the connection between emotions and memory consolidation.

For stored memories of type III/IV or IV/V a first model could be this. The memories of these types have associated labels (label is any 'event' associated with the event itself, such as emotions, smells, etc., types II, IV and V), in which there may or may not be labels with language (with language only types IV and V).

### VIII. Memories

Let us begin this section remembering the recent work of Knight *et al.*, (Bellier *et al.*, 2023). They '*analyzed a unique intracranial electroencephalography dataset of 29 patients who listened to a Pink Floyd song and applied a stimulus reconstruction approach previously used in the speech domain. We successfully reconstructed a recognizable song from direct neural recordings and quantified the impact of different factors on decoding accuracy*'. This is a real advance!

There is a theory in neuroscience and psychology that episodic memories formed before a child acquires language tend to be encoded with greater emotional charge and less semantic detail. It is based on studies that show that people have difficulty verbalizing or describing early childhood memories in detail, but still retain the associated emotional charge. The hypothesis is that, having no language, encoding those early memories relies more on brain regions linked to emotions like the amygdala, rather than linguistic regions like the neocortex. Therefore, the memory imprint would have an emotional 'label', but it would lack the narrative and semantic details that language provides. This would explain why early memories are often fragmentary, such as an isolated sensation, smell, or image, rather than an integral episode. Some evidence comes from studies with patients who lost language skills and mainly retain the emotional tone of early memories. This theory could help explain the often-elusive nature of our earliest childhood memories.

Episodic memories formed after a child acquires language would have a different kind of 'labels' or coding, the theory goes. By being able to verbalize and put experiences into words, later memories would have richer semantic labels. Semantic tags provide contextual information, details of specific people, actions, places, objects, and situations. It allows you to build a coherent narrative of the episode rather than just an isolated image or impression. The linguistic regions of the neocortex would be more active in the formation of these verbal memories. But the emotional coding is not lost, the language also allows to express the feelings associated with the episode. Therefore, memories of events after language are usually more vivid, complete,

and integrated. It even allows semantic storage of facts and concepts, not just personal episodes. Language then greatly expands the nature of memory encoding, making it more semantic, narrative, and factual. But the emotional experience is still present.

There are some 'anecdotal' reports of recovering forgotten memories through the use of some compounds with hallucinogenic properties (LSD, psilocybin). That qualification of 'anecdotal' is explainable by the prohibition (stupid to say the least) of scientifically investigating that possibility. It is also necessary to say that, due to the genetic differences between human primates, it is not possible to say *a priori* that this methodology will work, if at all, for all primates. The literature is full of scientific and technical articles showing that some drugs have shown more efficacy in certain ethnic groups (comment in passing; it is curious that the use of the expression 'ethnic groups' is accepted without any problem and garments are torn when the term 'races' is used. After all, one could draw up a list of ethnic groups and declare that they form a race.) In any case, a recent study suggests that only between 1.5% and 7% of the human genome is unique to our species and that 1.5 to 7% is not identical in all of us. Nor is the remaining 98.5 to 93% of DNA from other sources identical. The percentages may change in the future, but not the substance of the matter.

That said, there are a few other problems such as these:

1. Experiences under the influence of hallucinogens are highly subjective and can vary greatly from person to person. Hallucinogens alter perception, cognition, and emotions in complex ways, which can cause people to experience intense, vivid sensations and perceptions that can resemble memories. However, these experiences are not necessarily an accurate representation of actual past events.
2. Hallucinogens can affect memory and the ability to distinguish between real events and imagined or constructed events. This means that people who use hallucinogens may be more susceptible to suggestion and may generate false memories or distort their existing memories. These false memories can seem as vivid and real as genuine memories, making it difficult to determine their veracity. This is the most complex part of the matter.
3. Although there have been some studies on the effects of hallucinogens on memory, most of them have focused on the therapeutic potential of these substances in disorders such as post-traumatic stress disorder and depression, and not specifically on the retrieval of memories. The scientific evidence available to date is limited and does not conclusively support the idea that hallucinogens are effective in recovering lost or repressed memories.

4. People's expectations and beliefs can influence the interpretation of their experiences under the influence of hallucinogens. If someone firmly believes in the ability of hallucinogens to retrieve memories, they are more likely to attribute their experiences to that effect, even if there is no objective basis for doing so.

There are some common techniques used in the recovery of forgotten memories but as stated above, do not work for all primates. For example, hypnosis, memory retrieval therapy, cognitive-behavioral therapy, and interview techniques (for forensic purposes).

It is also said anecdotally that through some meditation techniques it is possible to recover all memories. Leaving aside the scientific approach, let's mention that legend tells us that Buddha ('The Awakened One') was able to remember all his reincarnations (many as they say) through meditation. At least let's concede that perhaps he was able to retrieve at least the memories of his present life (I have no opinion on the rest), which would be consistent with the anecdotal information in this regard. And what do these comments come to? One of the requirements to move towards the door of Plato's Cave (Gómez-Jeria, 2019) is the recovery of all personal memories. This is a fundamental step towards a type of superman that possesses a physical structure similar to that of modern human primates. There are other interesting possibilities that we will touch on elsewhere.

There are a few things to comment on. As we grow, our memory stores a large amount of information derived from everything we perceive and experience. However, not everything we perceive is recorded in our long-term memory. Memory appears to work through encoding, storage, and retrieval processes. Coding involves processing incoming sensory information and transforming it into mental representations in order to store them. At this stage, attention plays a crucial role, as it allows us to focus on certain stimuli and ignore others. Only a small fraction of the available information is encoded. When we are children, our attention is open to encoding all the new experiences we face. The hippocampus, a brain region key to memory formation, is very active at capturing and encoding events. As we grow, our focus becomes more on information relevant to our goals and interests. Other influencing factors are emotions and repetition. Emotionally charged experiences, both positive and negative, are more likely to be remembered. Repeated information strengthens neural connections by increasing their persistence in memory. Once encoded, memories go through a consolidation process. Related neural connections are strengthened and stabilized. When we need to retrieve a memory, the associated neural networks are activated. The more a memory has been consolidated, the more accessible it will be. In short, as we grow up, not everything we perceive is

stored in long-term memory. Only a small, highly significant, repetitive, emotionally charged fraction is encoded, consolidated, and finally stored for later retrieval. Our attention, it seems, acts as a filter, determining what information to encode.

The possibility of accessing all my memories, but in a controlled way would have its benefits. I could review my life as a temporary development. I could understand connections and patterns in my life that are normally hidden, seeing how certain experiences shaped me and understanding on a much deeper level the reasons behind my personality and reactions. Undoubtedly, access to that enormity of information would expand my self-knowledge in new and intense ways. It would take time to integrate and process so much information about myself. Even so, the amazement of being able to relive perhaps all or almost all of the richness of my unique life would fill me with fascination. And above all you could begin to analyze, understand, treat, and finalize the 'negative' memories and thus clean the Freudian garbage can. It would be a mentally healthy human primate.

But the matter does not seem to be so easy. One issue is to have theoretical access to all memories and another issue is to access them since it is not known what is 'there' (what memories are stored, a paradox).

To deal with the problem of not knowing the specific contents, I can think of a few ways I could choose to access them:

1. You could randomly access different memories, such as taking out a random sample to explore. It would be an unpredictable and spontaneous way to relive past experiences.
2. I could focus on extended periods of time (childhood, adolescence, etc.) or important events (birthdays, graduations, travel) to relive that stage or significant moment.
3. I could also try to access memories associated with different people, places or activities that have been important in my life. For example, memories with a loved one or in a certain city where I lived.
4. Another option is to try to obtain memories related to topics such as fears, joys, learning, relationships. That way I would live experiences linked to those concepts.
5. You could even access memories by asking random questions and letting the answer emerge.

In short, without knowing the contents, I would have to be guided by intuition, broad associations, and a certain randomness to explore and relive my stored memories. It would be fascinating to find out what emerges. This would make me a very, very complete person.

In addition, there is a very important fact to mention. The possibility of making conscious all the material that lies 'hidden' and that may correspond to various types of traumas and/or unpleasant situations that were 'hidden' from consciousness would allow us to deal and solve them and prevent their unconscious influence on our actions.

Note that having access to all of our stored memories could add some valuable elements to the philosophical debate about the mind-brain problem. It would allow us to explore more deeply the relationship between our subjective experiences and brain processes, verifying in first person how a memory revives when activating certain neural circuits. By recovering forgotten memories, we could delve deeper into the nature of memory and its brain storage, strengthening cognitive theories. We would also have a wider field of experimentation to test hypotheses about how mental states emerge from physical processes. We would live more clearly the integration between mind and brain, to verify how each personal experience is registered in our neural tissue. But we would also see the explanatory limits of that correlation, since full access to memories does not make us omniscient about our own consciousness, there are gaps that persist. In short, this capacity would expand our knowledge about mind-brain interaction, but it would also highlight that there are dimensions of subjectivity that transcend the physical, forcing us to continue to delve with humility into this complex philosophical problem.

As I said above, recuperating all simultaneously stored memories in the sense of making them 'appear' in the field of consciousness is not possible in human primates. That would be an intense and overwhelming experience. An authentic avalanche of emotions and sensations associated with those memories would flow, both happy and blissful and sad and painful that would be unmanageable since they would be intermingled.

From a current neuroscientific perspective, it is highly unlikely that all stored memories could appear simultaneously in the field of consciousness. There are several limitations at both the level of cognitive and neural processing that prevent it. Consciousness has limited bandwidth in terms of the amount of information it can keep active and process at once. This creates a bottleneck that prevents fully conscious access to all memories in parallel. When two memories or bits of information are activated at the same time, they tend to interfere with each other and become inaccessible or confusing. Activating all memories simultaneously would cause massive interference. The different neural groups associated with different memories inhibit each other. This prevents them from firing at the same time and competing for limited processing resources. The total number of neurons that can fire at once is limited. It is impossible for all neurons associated with decades



of memories to fire simultaneously. Attention acts selectively by focusing only a small set of neural representations at a time. It would be impossible to attend to the mass activation of so many different memories.

### IX. Other aspects to consider

I will briefly mention what has been believed or is believed to be some extra components of the physical body. I think it is important for the completeness of this work and for possible connections with some positions on the mind-brain relationship. Some of them could eventually be studied with the scientific method.

In a very general way, two concepts can be defined: soul and spirit. The soul is an intangible entity and is often considered immortal in many religious and philosophical traditions. It is believed that the soul is the essential part or the very essence of a human being or living being. In various cultures and beliefs, the soul can be seen as the source of consciousness, personality, morality, and individuality. Some people believe that the soul survives the death of the body and continues to exist in some form in the afterlife. Spirit is an immaterial entity believed to animate or give life to a living being. In many cultures and religions, spirit is considered to be the life force that distinguishes living things from inanimate objects. Spirit can also refer to the essence or intangible nature of a being or entity. Often, the term 'spirit' is associated with concepts such as vitality, energy, and connection to the transcendental or divine. In some beliefs, it is believed that spirits can exist separately from the body and can interact with the physical world. Let's look at some examples.

In Islam, the *al-rūh* is believed to be the human spirit that Allah infuses into every human being. The *al-rūh* is considered a divine gift that bestows life and consciousness on the individual. This concept is mentioned in the *Qur'ān*, the holy book of Islam. In Islamic psychology, the 'Nafs' denote body, person, soul, human being, which has different levels and states. The 'Nafs' can be purified and elevated through worship and seeking closeness to Allah (Nasr, 2009; Saheeh, 1997).

In Ancient Egypt, the 'ka' was conceived as a spiritual aspect or vital essence that remained attached to the body after death. It represented individual divine force or presence (Assmann, 2013; J. Taylor, 2003; Teeter, 1997). It was believed that he needed care in the afterlife. Offerings and food were provided at the tomb to ensure that the 'ka' had what it took to live an eternal existence. The 'ka' was thought to have a special connection to the image or statue of the deceased person and required its preservation (Wasserman, 2008). The 'ba' was considered as the personality or soul of the person, (J. Taylor, 2003). It was often depicted as a bird with the appearance of the deceased

individual. The 'ba' was associated with mobility and the ability to move freely between the world of the living and that of the dead. During the day, the 'ba' could return to the world of the living to interact with loved ones, while at night he returned to the afterlife. It was thought that the 'ba' should be reunited with the 'ka' and the body in the tomb to achieve eternal life in the afterlife. The 'akh' was the luminous and immortal aspect of the spirit that resided in the afterlife after death (Assmann, 2013). The 'akh' is an advanced phase of existence in the afterlife and is considered the final result of the transformation of the individual after death. When the 'ka' and the 'ba' met and merged properly, the individual attained the state of 'akh.' The 'akh' was considered a luminous and divine being who had overcome the challenges and trials in the underworld and who had attained eternal life. It was believed that the 'akh' was in a special relationship with the gods and that he could ascend to heaven and join the gods in his divine existence (J. H. Taylor, 2001; Wilkinson, 2003). The 'shut' represented the shadow or silhouette of the person. It was believed that each person had a shadow that should be preserved in the grave. The shadow was related to the identity of the person and his connection to the world of the living. Ensuring the preservation of the shadow was essential for the individual to exist in the afterlife. The 'ren' was the true name of the person who guaranteed his existence in eternity. Keeping the name was crucial, as losing it would mean extinction in the afterlife.

In Polynesian culture, the concept of 'mana' is central. 'Mana' is believed to be a spiritual force or supernatural power that can reside in objects, places, or people (Donaldson, 2019; Tomlinson & Tengan, 2016). In the Trobriand Islands, part of Papua New Guinea, there is a belief in 'vain,' which refers to the spirit of a deceased person (Malinowski & Frazer, 1961). In New Zealand Maori culture, the term 'atua' is used to refer to divine beings or ancestral spirits who play an important role in everyday life and religious beliefs (Bishop, 2021). In the Zulu culture of South Africa, the 'Moya' is the term used to refer to the human spirit or breath of life. The 'Moya' is believed to be the very essence of life and consciousness (Berglund, 1976). In the Nahua culture, which included the Aztecs, the 'Nagual' was believed to be a protective spirit or spirit animal associated with a person. It was believed that the 'Nagual' was linked to a person's soul and that it influenced their destiny (Carrasco, 2012). In Mayan cosmology, it was believed that each person had a 'hun' and a 'pok,' which were components of the human soul. The 'hun' was related to consciousness and life, while the 'pok' was linked to spirit and life force (Freidel, Schele, & Parker, 2001).

We must also mention the experience of an 'observer' or a presence that seems to observe or accompany a person during the use of hallucinogens. This is a phenomenon that has been constantly reported

by many people who have experimented with psychedelic substances. There is no known scientific explanation for these reports. Perhaps this is related to the 'strange sensation that another person is nearby when no one is actually present and cannot be seen, heard, or felt by the sense of touch' (Hara, Blanke, & Kanayama, 2021).

The main conclusions obtained from the reading of all the material presented here are that we need to achieve a full and complete knowledge of the central nervous system structure and functioning at all levels and that we need to do the same for the 'mind'. Only after this stage we shall be able to reach the next stage in our evolution.

We think that in this short work we have been able to present an overview of the current situation. We hope that it will help to open new avenues of study of this fascinating subject. It is problematic to declare one day that our knowledge of our physical body is 'complete' and that there is nothing more to investigate about it. Scientific method cannot do this. Frontier research show that there are indirect observational pieces of evidence for the existence of dark matter and dark energy, and that only about 4.5% of all universe content is ordinary matter. String theory and other theories of theoretical physics suggest the possibility of the existence of additional spatial dimensions beyond the three we experience in our daily lives (length, width, and height). These extra dimensions could be small and curled up, making them difficult to detect on macroscopic scales. The question you might ask yourself is if any of these phenomena were real, would they have any relevance to our physical body or not? Let it be said that I am not trying to introduce the *argumentum ad ignorantiam*.

I feel it necessary to conclude this text with these reflections. About eight million years ago we started the path that led us to what we are today. We've made tremendous progress over the last 50,000 years, but we still have an aggressiveness that we share with the other primates. We are destroying the world and those who can make the decisions to stop this suicidal attitude do not seem to care. Climate change is already a reality, and I wonder whether we are going to become extinct or whether this civilization is going to suddenly disappear. It is said that when these times come, there always appears a Hero who tries to save us. I wish that will be the case.

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