Article

Mystical Experience †

Johannes Bronkhorst

Department of Slavic and South Asian Studies, University of Lausanne, CH-1015 Lausanne, Switzerland; johannes.bronkhorst@unil.ch
† This article continues, expands, and deepens the research published in Bronkhorst 2021. Repetitions have been kept to a minimum but could not be altogether avoided. I thank Fabio Armand, Halvor Eifring, Michael Herzog and Richard Walker for useful feedback.

Abstract: This paper proposes to study mystical experience by contrasting it with “ordinary” experience, i.e., with standard consciousness. It emphasises the construed nature of standard consciousness and the role that the mutual connectedness of mental contents plays in its construction. It then shows that removal of the factors that are responsible for the “making” of standard consciousness accounts for the principal features of mystical experience; these features are, therefore, mainly negative. Understanding mystical experience as the suppression of factors that contribute to the construction of standard consciousness, along with a discussion of the mechanism that makes this possible, permits answers to some frequently asked questions, such as: Why is mystical experience ineffable? What is its epistemic status? Does it have implications for our understanding of mind, consciousness, and self?

Keywords: mysticism; experience; absorption

1. Introduction

What is mysticism? Humpty Dumpty might have no difficulty answering this question given the way he treats words: “When I use a word, it means just what I choose it to mean—neither more nor less.” (Carroll 1872, p. 124) It seems that many of those interested in mysticism sympathize with Humpty Dumpty. Some define mysticism as a belief of some sort; others as a practice connected with ecstatic experiences; others, again, combine the two and emphasize the knowledge supposedly granted by those experiences.¹

There is nothing wrong with this free use of the word mysticism, at least not in principle. However, in practice, it results all-too-often in confusion between different domains, the connections between which are then taken for granted. One might think that the study of mystical experience should deal with experience. In reality, much of the literature mined for information about mystical experience has no demonstrable link with anybody’s experience whatsoever.² Hindu and Buddhist literature is often cited in this context. It is somehow assumed that the authors of the Upanishads, or Shankara, the main representative of Advaita Vedanta, and so many others, derived their ideas from mystical experiences. Indeed, one comes across claims such as the following: “Descriptions of spontaneously occurring mystical experiences date back millennia to the early Indian Upanishads” (Johnson et al. 2019, p. 92). No attempts are made to justify such claims. Yet, none of the authors of these early texts ever mention anything like a personal mystical experience.

Buddhism fares worse. Many Buddhists are apparently thought of by modern investigators as inveterate meditators, and it is all-too-often taken for granted that meditation gives rise to mystical experiences. Yet, no classical Buddhist authors ever refer to any kind of personal mystical experience. In fact, scholars have pointed out that meditation is not all that popular in many Buddhist circles and probably never was (Sharf 1995, 2000). And even those who do meditate do not necessarily have deep mystical experiences (more on this below). Worst of all, the philosophical developments within Buddhism can well be
accounted for without assuming any kind of extraordinary experience whatsoever (see, e.g., (Bronkhorst 2011)). The idea that some of these developments are indebted to the mystical experiences of their authors has been criticized in recent discussions. In short, there is no evidence that Buddhist literature gives expression to the mystical experience of its authors.

We do not have to go all the way to Asia to find examples of the misattribution of mystical experience. Consider Meister Eckhart, often considered the founder and foremost representative of Rhineland mysticism, or even “der Mystiker schlechtlin”. Nowhere does he claim that his teachings are based on personal experiences. Some authors are not bothered by this and claim that Meister Eckhart must have had mystical experiences. W. T. Stace (1960, p. 64), for example, wrote: “[Eckhart] does not say in so many words that the oneness of all things of which he speaks is anyone’s actual experience. . . . But no one who is familiar with his style of writing can doubt that the ‘depth’ of which he speaks is the depth of his own experience.” And again (p. 58): “Anyone who reads these writers [i.e., Eckhart, Ruysbroeck, Sri Aurobindo] with insight soon sees that they must be writing of their own experiences. But this has to be gathered from the ‘feel’ of their writings. They do not themselves tell us in so many words.”

It is a safer bet to state the obvious, namely that the reliability of many of the sources habitually invoked for the study of mystical experience is doubtful. Many of the claims these sources make have no demonstrable connection with mystical experience.

This puts scholars of mystical experience in a tricky position. If they are serious about wishing to study mystical experience, they have to find out which of their sources have or had “authentic” mystical experiences and limit their studies to the testimonies of those “approved” mystics. But how do we determine whether an experience is authentically mystical? Reports of “mystical” experiences have been collected. Are they all equally authentic? Are some more “sacred” than others, which are “profane”? Alternatively, are some of these experiences “deeper”, and for this reason, more “authentic” than others? In the absence of any objective measure of “depth” of mystical trance, how does one distinguish one from the other?

It seems clear that numerous obstacles stand in the way of the scientific study of mystical experience. We could try to make lists of features that supposedly characterize “real” mystical experience, or worse: we could try to define the problem away. Either way we impose personal preferences. But what are those preferences based on? What could be their justification?

To avoid these problems, I propose to apply an established scientific principle: no enumeration of features will, in and by itself, lead to deeper understanding. We need theory, even to make useful observations. Since we are studying experience, that theory should probably be a psychological theory. In what follows, I will briefly present such a theory. It will become clear that it accounts for certain (but not just any) extraordinary experiences. Indeed, it is important not to fall into the trap of essentialism. It will be pointless to “define” mystical experience in one way or another and then criticize the theory for not explaining all of it, or too much. The present article claims no more than that the theory herein proposed predicts certain experiences, at least some of which tend to occur in reports that are widely looked upon as “mystical”.

The theory will further allow us to propose an answer to the question of why people who have never had “mystical” experiences will yet be inclined to make statements that share features with those made by “real mystics”.

2. Theory

The point of departure has to be the observation that mystical experience is extraordinary in comparison with “ordinary” or standard consciousness. However, standard consciousness is not “ordinary” in any absolute sense. It is now well known that standard consciousness is construed. Our perception of the world, including ourselves and our emotions, is made. As the neuroscientist Anil Seth put it in his recent book Being You (Seth 2021, p. 220): “All of our perceptions and experiences, whether of the self or of the
world, all are inside-out controlled and controlling hallucinations that are rooted in the flesh-and-blood predictive machinery that evolved, develops, and operates from moment to moment always in light of a fundamental biological drive to stay alive."

The construction of "normal", standard consciousness takes place with the help of other mental contents. Memory images play a particularly important role in this. Standard consciousness presents us with a picture of reality many of whose elements we recognize. Recognition is re-cognition, which is to say that associated memory images play a role in our perceptions. If the connection with those memory images were to be interrupted, we would then experience a world that we do not recognize and might interpret as being a different reality.

Similar reasoning can be applied to other aspects of standard consciousness. Our experience of temporal duration, of the flow of time, is a construction. Conscious percepts occur only at discrete moments in time. These “snapshots” represent integrated, meaningful outputs of unconscious brain processing that have taken place during the relevant time slice. Note that late manipulations, 400 milliseconds after a stimulus, can still alter the conscious perception of the stimuli. In other words, a collection of mental contents (most of them corresponding to non-simultaneous stimuli) jointly construes an experience of duration.

A particularly important construction is our sense of self. Memory images, again, play a central role, but so, no doubt, do other mental contents, including hopes, fears, concepts, etc. If the links with those mental contents could be reduced or even suppressed, the result would be a modified (or even annihilated) sense of self. Since our sense of self separates us from others, a further consequence would be that we no longer feel separate from others, that there would be no felt boundaries between us and others, easily interpreted as a sense of unity.

Language plays an important role in the construal of our experience of the world. Since this role may be less immediately obvious, the following section will deal with it in some detail. Readers who do not need to be convinced of the importance of language in standard consciousness may skip the next section and move directly to § 4.

3. Language

What is the role of language in standard experience? This question is not about different ways in which speakers of different languages presumably experience the world, as will become clear below. Our question concerns the acquisition of language tout court, i.e., the acquisition of a first language (normally in childhood). In order to answer this question, it is of no use to contrast speakers of different languages; we must, rather, contrast those who speak one or more languages (any languages) with those who do not speak any. Our question now becomes: Does the acquisition of a first language affect the way in which speakers experience the world (including themselves)?

We have to proceed carefully, for this way of formulating the question may still be misleading. There are plenty of people who are born deaf and never learn to speak or understand spoken language. However, many of them learn sign language, which must be included in our understanding of the term “language”. The scope of our inquiry must, therefore, be further reduced and consider deaf people who have not learned sign language. Do such people experience the world differently? Once again, the answer appears to be negative. Children in that situation tend to develop simple, idiosyncratic gestural systems to interact with their hearing families. Such simple systems can occasionally give rise to a developed sign language; this happened in the case of Nicaraguan Sign Language. It seems, then, that children tend to develop language (if only simple language) in situations where they can interact with others. This takes our inquiry to children who cannot, or can only rudimentarily, interact with others. These include children who have neither hearing nor sight from birth or from an early age onward. There are some recorded cases wherein such children come to master language through touch. One of these is Laura Bridgman (born in 1829), who learned to “finger-talk” from the age of seven onward. (Christiansen
Religions 2022, 13, 589

and Chater 2022, pp. 194–97) More famous is Helen Keller, born some fifty years after Laura Bridgman. Her recorded memory of the time before she mastered language (at the age of seven, through touch) is of particular interest in the present context: (Keller 1910, pp. 113–14)

Before my teacher came to me, I did not know that I am. I lived in a world that was a no-world. I cannot hope to describe adequately that unconscious, yet conscious time of nothingness. I did not know that I knew aught, or that I lived or acted or desired. I had neither will nor intellect. I was carried along to objects and acts by a certain blind natural impetus. I had a mind which caused me to feel anger, satisfaction, desire. These two facts led those about me to suppose that I willed and thought. I can remember all this, not because I knew that it was so, but because I have tactual memory. It enables me to remember that I never contracted my forehead in the act of thinking. I never viewed anything beforehand or chose it. I also recall tactualy the fact that never in a start of the body or a heart-beat did I feel that I loved or cared for anything. My inner life, then, was a blank without past, present, or future, without hope or anticipation, without wonder or joy or faith.

This passage may be unique in that it allows us a glimpse into a pre-linguistic state as remembered in a state endowed with language. I am not aware of other such testimonies. Indeed, Merlin Donald, who dedicates part of his book A Mind so Rare (Donald 2001, pp. 232–51) to a discussion of Helen Keller, observes (pp. 248–49): “There are good reasons to consider Helen’s case as a paradigmatic experiment of nature. She epitomized the dilemma of the isolated mind in a way that is unlikely to be matched.”

Donald makes some further observations that are relevant to our query. He points out that initially, Helen failed to understand hand signing (pp. 242–43): “At her first exposure, hand signing did not work at all. Annie (i.e., Helen’s teacher) repeatedly produced the appropriate patterns, day after day, week after week, but Helen did not even realize that the shapes that Annie traced into her palm were meant as symbols for something else.” Donald concludes (p. 249): “The main lesson to be learned from her life is perhaps the simple fact that even a mind as talented and remarkable as hers was incapable of generating the basis of symbolic thought on its own.” We may add that Helen Keller, and presumably all of us, need language in order to gain access to symbolic thought. To quote Donald one more time (p. 250): “From her own testimony, deep enculturation freed Helen Keller’s mind, let her out of prison, and allowed her to think. All her depth and richness as an adult came from the emancipating effect of symbolic culture.”

The question we have to address is: Are wordlike symbols (including gestures) based on pre-existing concepts? Or is it the other way round: concepts are formed (at least originally) on the basis of symbols? Do children first form (or inherit) concepts which they subsequently associate with the appropriate words? Or are concepts formed as a result of learning words? Helen Keller’s case appears to support the latter of these two alternatives.

The former position seems (at least at first sight) to be taken by Gilles Fauconnier and Mark Turner, who introduced the notion of mental blending. In their opinion, “our ability for full human language is a product of our ability for blending” (Turner 2014, p. 9). We should not be misled by such claims. Full human language, for Fauconnier and Turner, is primarily grammar (Fauconnier and Turner 2002, chp. 9; 2008). We are not, at present, interested in grammar, but in words, which can exist and be used even without grammar.

The idea that concepts are formed as a result of the acquisition of language is not foreign to psychology. Prominent among those who accept it are Lev Vygotsky and those who draw inspiration from his work. Blunden (2012, chps. 13 and 14) gives a detailed presentation and analysis of Vygotsky’s “somewhat challenging” (as he puts it) thinking in this regard. Here are some excerpts that sum up Vygotsky’s thoughts (emphasis added):

During the first year of life, a child will be quite unable to use the sign-stimulus, will not understand the directions from the experimenter and can relate to the
objects only haphazardly. *It is really senseless to talk of concepts at all at this stage of development.* . . .

. . . for Vygotsky, being able to name an object is *not* evidence of having a concept of it, at least not a true concept . . .

A concept is a mediated relationship of a person to their environment in which a word, acting as a sign for a problem or solution encountered by the community in the past, is used to organise the individual’s actions, but which necessarily also includes immediate sensorimotor interactions with the environment. . . .

. . . In so far as [children’s] relationship to the world is mediated (for example through sensorimotor activity itself), the mediating element is their own body—grasping, crying, sucking, etc. In such a condition, a child is not able to develop concepts at all. Indeed, in their first efforts at using words, they completely fail, but, as the saying goes, *in order to swim one must get into the water,* and *once the child throws themselves into speech,* they begin to learn, and *the most embryonic phenomena of conceptual thinking can be said to have come into being.*

This is not the place for a further analysis of Vygotsky’s thought and its reception by more recent thinkers. For our present purposes, it suffices to see that the notion that young children do not yet have concepts, which develop over time under the influence of words, has a respectable presence in academic psychology.

This same idea—that concepts are formed as a result of the acquisition of language—plays a role in theories regarding the first use of wordlike symbols (which may include gestures) in our evolutionary past. Derek Bickerton is an example. (See also Johansson 2021, p. 232 ff). The subtitle of his book *Adam’s Tongue* (Bickerton 2009)—*How humans made language, how language made humans*—already reveals this to some extent. Our question is: *How did language make humans?*

In his book, Bickerton makes a distinction between categories and concepts: “a concept is something you can ‘think about’ and ‘think with’, whereas with categories, all you can do is say whether something belongs in them or not.”(Bickerton 2009, p. 289) For example, concepts allow us to think about things that are not physically present; we can think about a leopard even if there is no leopard anywhere nearby. Nonhuman animals have no concepts, only categories, as did protohumans. Bickerton elaborates on the difference in the following passage (Bickerton 2009, p. 292):

So what exactly is there, in a leopard-identifying animal’s brain?

I think there is not anything in its brain that relates specifically to leopards in the way that either a thought or a word in the human brain does. All over the brain there are cohorts of neurons that respond directly to all the sights and sounds and smells that come in from the world by changing the rate at which they send out electrical impulses. Among all of these cohorts are neurons responding to sights and sounds and smells that might be made by leopards. When “enough” of these neurons (“enough” being still a black box) are triggered by a leopard appearance, the animal goes into high alerts, may issue an alarm call, may take appropriate action. But the neurons activated on any given occasion are just one subset of the complete set of potentially leopard-responding neurons. The next appearance of a leopard may trigger a quite different subset, though the result (in terms of the animal’s reactions) may be identical. Bottom line is, there’s nowhere any fixed, determined set of linked neurons that represents “leopard” and nothing else.

But once you have a word or sign for “leopard”, there has to be such a set. There has to be a fixed, permanent set of neurons that represent the sounds or gestures needed to produce the word or sign in question. But for that word or sign to have meaning, this fixed set has to link to all the different representations of leopard-bits on which the original “leopard” category was based.

Differently put, concepts are the result of combining different mental contents.
Bickerton takes care to avoid saying that all concepts correspond to words (Bickerton 2009, pp. 292–93):

I’m not saying that “concepts are words”, or “you have to have a word to have a concept”. Least of all am I saying, “You cannot think without words” . . . Once the brain found the trick of making concepts, it no longer needed a word as the base for a new concept. It just needed some place where all the knowledge could come together and link with other concepts.

Note that these passages, which are about the appearance of wordlike symbols in humanity’s evolutionary past, can also be applied to a modern infant’s acquisition of its first language. We may assume that a modern infant is genetically better equipped for this transition than were its remote ancestors (or some of the nonhuman animals that have been taught limited use of language, more or less successfully), but this does not change the fact that Bickerton’s remarks imply that infants have no concepts until they learn their first language. And concepts, unlike categories, can be combined, thus giving rise to the human capacity to think about things that are not present (or may not even exist) and invent stories and much else. Concepts are mental symbols of reference no longer bound by particular instantiations of the things referred to. To quote Bickerton, they made possible, in our remote ancestors, “true escape from the here and now in which all species had hitherto been trapped” (Bickerton 2009, p. 305). Young children make the same escape when they learn their first language. They are trapped in the here and now until language allows them to make their escape. Without concepts, they cannot conceive of anything different from their present situation and cannot put their present experience into any kind of perspective the way we can. They cannot even create their own narrative, and therefore, their narrative self. In other words, their experience of the world is fundamentally different from that of those who have acquired language.

Bickerton is not the only one to have tried to specify the specific circumstances in which the introduction of wordlike symbols, even a handful of them, are favoured by selection. It does not really matter for us, at present, what exactly those circumstances were, as long as we can agree that those first words—both in our evolutionary past and in young children nowadays—fundamentally change the way in which those involved start experiencing the world.

We cannot leave this topic without asking whether different languages give rise to different conceptualizations of reality. The claim that they do is known as the Sapir–Whorf hypothesis. This hypothesis has been confirmed, but only to a limited extent; this is no doubt because external reality is, to a large extent, the same for all. However, certain areas of experience leave more room than others for different interpretations; colour perception is one of them (Christiansen and Chater 2022, pp. 249–51). Particularly striking is the area of emotions. Human emotions, like all our experiences, are made, as indicated in the title of a recent book by Lisa Feldman Barrett (2018): How Emotions are Made. Barrett shows that the conviction that we humans have a fixed set of basic emotions—as maintained by Charles Darwin (1872) in his The Expression of the Emotions in Man and Animals and by many others—is mistaken: Emotions are made and will, therefore, be experienced differently in different cultures (see also Lindquist (2021); Lindquist et al. (2006)). However, it is important to remember that the differences that exist between the experiences of speakers of different languages are negligible in comparison with the differences that exist between the experiences of those who do and those who do not (or do not yet) speak a language (any language).

It appears, then, that there are good reasons to think that language plays an important role in the construction of our experience of the world, i.e., of standard consciousness. Indeed, where standard consciousness is concerned, “The furniture of the universe is available to us only as symbolically mediated—and primarily so in language.” (Jensen 2011, p. 41) (This observation is, of course, not valid for the mystical dimension of experience, which deviates from standard consciousness.) Without the mental associations created by
language between different representations, experience would be without concepts and, therefore, ineffable.24

4. Mental Absorption

The examples presented in § 2 strongly suggest that, if only it were possible to reduce or suppress associations with other mental contents, the result might be a form of consciousness in which essential factors that contribute to standard consciousness are weakened or even absent. Sticking to the examples considered, the resulting consciousness might be unrecognizable (a different reality), timeless, selfless and without boundaries, and ineffable.

Are there mechanisms that reduce or suppress mental associations? One universally shared human faculty does just that. Humans and many other animals possess the faculty of concentration. Concentration reduces or suppresses mental associations, allowing the individual concerned to avoid being disturbed by irrelevant sense impressions and mental noise. There is a limit to the depth of concentration in most of us, but it is easy to imagine greater depths of concentration that reduce or suppress mental associations of which we are not ordinarily aware. Using the expression (mental) absorption25 in connection with the exceptional depths of concentration that are available to some (perhaps many in exceptional circumstances), we are led to expect that the experience of people in the most extreme states of absorption will be unrecognizable, timeless, selfless and without boundaries, and ineffable.26

The theory thus far presented is incomplete and leaves open several questions. We will turn to them below, but we can now already draw some hypothetical conclusions. The theory proposes a link between certain forms of experience, on the one hand, and states of deep absorption, on the other.27 The experiences concerned are all essentially negative: they are lacking in factors that are constitutive of standard consciousness. We have considered unrecognizability, timelessness, selflessness and the related absence of the distinction between self and others, and ineffability. There are no doubt others. The theory suggests that those who have these experiences, or any one or several of them, find themselves in a state of deep absorption. It also predicts that those in whom a state of deep enough absorption can be induced will have such kinds of experiences (Cf. Berkovich-Ohana et al. (2013); Wittmann (2018, chp. 2)).

We have to face a crucial question. Is there anything left once one removes the factors that are constitutive of standard consciousness? Is the result still consciousness? Is the person who recognizes nothing, who is unaware of the passage of time and has no sense of self still conscious in any meaningful way?

This question takes us to an issue that is at the heart of consciousness studies:28 the distinction between what are sometimes called “phenomenal consciousness” and “access consciousness”. A recent publication describes it as follows (Mashour et al. 2020, p. 776): “Phenomenal consciousness, by definition, involves a hypothetical and idealized situation of pure subjective experience . . . without further associated information processing (and, therefore, no need for verbal report). Access consciousness refers to the fact that conscious information, unlike unconscious information, is accessible to numerous cognitive processors, such as those mediating working memory, verbal report, or motor behavior.” The preference of the authors of this publication seems clear from the way they continue: “The importance of this distinction remains hotly debated, but it has been suggested that ‘global availability of information . . . is what we subjectively experience as a conscious state’.”

Not everyone agrees. Three brain researchers in particular, whose most recent books came out in 2021, take a different position. They are Anil Seth 2021 (whose book Being You is already mentioned above), Mark Solms 2021 (The Hidden Spring),29 and Antonio Damasio 2021 (Feeling & Knowing), all of whom prioritize feeling in the study of consciousness.30 I will here follow the last of these three authors.

For Damasio, feeling is a precondition for consciousness. Feelings—he points out (p. 95)—“arise in the interior of organisms, in the depths of viscera and fluids where the
chemistry responsible for life in all its aspects reigns supreme . . . They inform each mind—fortunate enough to be so equipped—of the state of life within the organism to which that mind belongs. Moreover, feelings give that mind an incentive to act according to the positive or negative signal of their messages.” Feeling plays a role in making minds conscious, as the title of Damasio’s book already indicates. It can do so because “consciousness” and “mind” are not synonyms. “Consciousness is a distinctive state of mind” but “not all mind states are necessarily conscious” (p. 135).

The following passage from Damasio’s book is directly relevant to our reflections (p. 73):

The simplest variety of affect begins in the interior of a living organism. It springs up vague and diffuse, generating feelings that are not easily described or placed. The term “primordial feelings” captures the idea.

An endnote specifies (p. 204):

My use of the term “primordial” is conventional and meant to refer to the simple and direct nature of what I conceive of feelings as having been as they emerged in early human evolution and as they still are likely to be in many nonhuman species not to mention human infants.

Here, then, we meet a theory that describes standard adult consciousness as composite. Feeling is a “foundational component”, but more elements are needed for standard consciousness to arise. It is clear that Damasio’s theory does what we were looking for: it provides an analysis of standard consciousness and tells us what would remain if we could remove the added mental elements.

Damasio sums up his understanding of consciousness in the following words (p. 123): “Consciousness . . . is a particular state of mind resulting from a biological process toward which multiple mental events make a contribution. The operations of the body’s interior signaled via the interoceptive nervous system contribute the feeling component, while other operations within the central nervous system contribute imagery describing the world around the organism as well as its musculoskeletal frame.” The “imagery describing the world around the organism as well as its musculoskeletal frame” corresponds to the mental contents that contribute to standard consciousness. Without the contribution of these multiple mental events, only the foundational biological process that contributes the feeling component would remain. In an earlier book, Damasio (2019, p. 152) does not exclude access to this background feeling: “The ebb and flow of spontaneous homeostatic feelings provides for an ever-present background, a more or less pure sense of being of the sort that those who practice meditation aspire to experience.”

5. Mystical Experience

This, then, is the theory here proposed. A reduction or suppression of associations with other mental contents, if it can be accomplished, will produce experiences that can be characterized as unrecognizable, timeless, selfless, and ineffable. These same features characterize experiences that are commonly referred to as “mystical”, as is clear from the list of feelings/insights that mark mystical experiences according to the “Mystical Experience Registry”:

- A sense of unity or totality
- A sense of timelessness
- A sense of having encountered ultimate reality
- A sense of sacredness
- A sense that one cannot adequately describe the richness of this experience.

All but one (“sacredness”) correspond to the features so far predicted by our theory. This absence is explained by the fact that the present article does not discuss the feelings that accompany mystical experience.
The theory also predicts that the required reduction or suppression of associations with other mental contents can be attained by means of the particularly deep form of concentration we call absorption. We can go one step further and propose that, if and to the extent that mystical experience has one or more of the characteristics herein discussed, it is a result of such a reduction or suppression. Such mystical experiences will normally be accompanied by (and are, indeed, the result of) deep mental absorption.

In order to avoid conflict with those who hold essentialist notions of what mysticism “really” is, I will, in what follows, use the expression “mystical experience” or “authentic mystical experience” only with respect to experiences that have one or more of the characteristics discussed. The theory will allow us to answer questions that have been raised about mystical experience (or at least about mystical experience thus defined). Before turning to them, we have to confront a difficulty hinted at in the beginning of this article: some of the features of authentic mystical experiences are part of the teachings of individuals who, to the best of our knowledge, never had any such experience. How can we explain Meister Eckhart’s insistence on union with God? How can Upanishads speak about a realm beyond words? How can Nagarjuna deny the existence of temporal reality? Presumably none of the authors concerned had had a mystical experience. I will, in such cases, speak about “inauthentic mystical teachings” (i.e., not based on authentic mystical experience), to be distinguished from “authentic mystical teachings”; similarly, I will speak of “authentic” and “inauthentic” mystics.

At first sight, one might be tempted to think that inauthentic mystical teachings merely show the influence of authentic mystical teachings on the individuals concerned. This answer is not satisfactory, because it begs the question: Why should someone who never had a mystical experience follow the teachings of an authentic mystic and not someone else’s? Do people have a proclivity to believe authentic mystical teachings? If so, why would they need the teachings of an “authentic mystic” to proclaim ideas that have a mystic flavour? We will return to these questions below.

First, we must dispose of the idea that the constituent elements of standard consciousness are experienced separately. They are not. It is true that deep absorption can reduce or suppress some of those constituent elements, but the foundational component of standard consciousness—i.e., feeling—cannot be separately experienced as a component of standard consciousness, and cannot be separately remembered as such either.

Let us look somewhat more closely into the matter. The reports or teachings of authentic mystics are based on personal mystical experiences (more precisely, interpretations of them). During those experiences, their consciousness was temporarily stripped of the factors responsible for standard consciousness. Authentic mystics remember those experiences and try to communicate their contents to others. Non-mystics do not have such experiences in their adult lives.

But they did have such experiences in earliest childhood! It is true that at that early period, their consciousness could not be stripped of the factors responsible for standard consciousness, for the simple reason that those factors were not yet there. Apart from that, their experience resembled that of the authentic mystic. Is it conceivable that non-mystics, too, will remember the fundamental consciousness that was to become the foundational component of standard consciousness? Their memory will be different from that of authentic mystics, to be sure. The latter will have episodic, autobiographical memory of the mystical experience; they will remember it as something that is theirs and has become part of their autobiographical self. Memories from earliest childhood, on the other hand, pertain to a time before there was a sense of self, that is, before the formation of an autobiographical self. As memories, they do not belong to me or to anyone else, nor are they part of a continuing story of the narrative self. Memories pertaining to consciousness in earliest childhood must occupy a place of their own and are, by their nature, vague and imprecise. Yet, it makes sense to assume that they are there and that they are the reason why even non-mystics have a tendency to pronounce (or believe) statements that, at first sight, seem to give expression to authentic mystical experiences.
6. The Memory of Mental States

These last remarks require further reflection on the memory of mental states. Conscious memory recalls experiences that were once conscious. It does not recall experiences that were never conscious. The mental state of early childhood was once experienced consciously, so from that point of view, it might be remembered. However, does memory ever recall mere states of consciousness?

The academic study of memory concentrates, for understandable reasons, on the recall of events or objects. The state of consciousness that we had in early childhood concerned neither events nor objects. What reason is there to think that a mere state of mind might be remembered?

A kind of memory that is widely studied is episodic memory. As indicated by its name, it concerns episodes, i.e., events. Does episodic memory also cover mental states that were once experienced? The answer must clearly be yes. Altered states of consciousness—mystical experiences, but not only those—are remembered by those who have had them.

Some observations by Endel Tulving, one of the pioneers of memory studies, confirm this. According to him, episodic memory is correlated with autonoetic consciousness. Autonoetic consciousness “confers the special phenomenal flavour to the remembering of past events, the flavour that distinguishes remembering from other kinds of awareness”. Tulving then refers back to ideas already expressed by Hermann Ebbinghaus in the nineteenth century: “Ebbinghaus distinguished between three kinds of effects of ‘mental states which were at one time present in consciousness and then have disappeared from it’ . . . In the first place, he suggested, we call back into consciousness a seemingly lost state that is then ‘immediately recognised as something formerly experienced’ . . . : that is, we remember. . . Ebbinghaus’s first case can be thought to correspond to autonoetic . . . consciousness.”

Radulovic et al. (2018, p. 4) rightly comment: “On [Tulving’s] view, what matters is the remembering of the experience itself rather than the remembering of the fact of the experience”. According to Tulving, then, episodic memory can and does remember mental states.

Notice that—in spite of the claim that “[t]he autobiographical reference of episodic memory is uncontroversial” (Renoult and Rugg 2020, p. 2)—episodic memory can be said to occur without an autobiographical self, as pointed out by Gopnik (2009, p. 146):

you could say that babies and young children have episodic memory but not autobiographical memory. Although they are very good at remembering specific events in the past, they do not put these events into a single coherent timeline, do not remember how they know about the events, and do not remember their past attitudes toward events. . . And they do not have a single “inner autobiographer”, a self who links their past and present mental states.

At present we are not interested in the memory of events, but of states of awareness. And we have seen that episodic memory can recall such states. It is this memory, I submit, that predisposes us to numerous practices and beliefs that we commonly associate with religion.

Consider, finally, the phenomenon called “state-dependent memory”. It implies that people remember better if their physical or mental state at the time of recall is the same (or sufficiently similar) as at the time of encoding. This phenomenon would not be possible if states of consciousness did not leave memory traces. It raises, however, an interesting question. Is it possible that many religious practices—including prayer, meditation, and ritual (see below)—are practised because they help people enter a state such as the one they experienced in earliest childhood (if perhaps not exclusively so)?

7. States and Statements

The theoretical notions developed in the preceding pages allow us to confront some frequently asked questions. A much-debated question is whether mystical experiences in different times, cultures, and religions share a common core. Often, the debates concentrate on what mystics say about their presumed experiences and explore whether these statements...
share common features. The theory here presented suggests that this is the wrong question to ask. Yes, the experiences that we call “authentic mystical experiences” are essentially the same (leaving out of consideration potential differences in the depth of absorption, to be discussed below). They all approximate the foundational component of standard consciousness. But there is not much that can be said about that foundational component apart from it being without the factors that contribute to the making of standard consciousness. Our attempts led to a list of negative terms: unrecognizable, timeless, selfless and without boundaries, and ineffable. Attempts by others do not add much: “more or less pure sense of being” (Damasio), “cognitively subterranean, inchoate, difficult-to-describe experience of simply being a living organism”, “without any describable content” (Seth). Perhaps the only positive thing one can say about it is that it is a state of feeling.

Add to this that “mystical statements”, as we have seen, can be made by people who are not “authentic mystics”. In fact, mystical statements can be made by authentic mystics, by non-mystics, and by those who may have had half-way mystical experiences. (Remember that there is still no objective way to measure depth of mystical experience, or depth of absorption, for that matter, nor are there refined methods to induce deep absorption.) In practice, this means that it will be extremely hard to show that a specific statement was made by someone who has had a full authentic mystical experience. All this implies that all statements presumably expressive of mystical experiences are interpretations at best. As such, they are likely to differ across time, and between cultures and religions. If and to the extent that they emphasize the negative side of the experience (the term via negativa comes to mind), they hit the mark as far as the experience is concerned. However, if they claim to speak about mind-independent reality, such statements are no more credible than any other claims about mind-independent reality. Other evidence will be required to support them. The mere fact that they are supposedly based on mystical experience cannot count as a justification.

8. Further Implications

The theory herein proposed has some further implications. Recall that mystical experience, as herein understood, is accompanied by states of deep absorption. Since absorption, like concentration, can be of varying depths, it follows that mystical experience, too, can be of varying depths. That is to say that there is no simple yes/no or black/white relationship between what might be considered “real” and “unreal” mystical experiences. In other words, “mystical experiences” of varying depths cover the space that lies between deepest possible mystical experience and standard consciousness. Mystical experiences of varying depths presumably come about when the corresponding level of absorption is attained.

Keeping this in mind, it is noteworthy that certain human activities—and “religious” activities, in particular—are conducive to states of absorption. A detailed discussion can be found elsewhere (cf. Bronkhorst 2017, 2021). Here, a short list of such activities must suffice. Mental absorption is inseparable from prayer in some of its forms (see, e.g., Luhrmann (2020); Lifshitz et al. (2019)). It also characterizes ritualized acts. Communal singing or dancing has the same effect. The practice of mental absorption itself is promoted in several religious currents, especially in India, where it is supposed to lead to altered states of consciousness. None of these activities guarantee the attainment of very deep states of mystical experience. However, they do suggest that the search for mystical experiences, even light ones, is part and parcel of human behaviour. Some of these activities are “religious”, and others take place outside “religious” contexts, for instance, at ceremonial events. It would be a mistake to look upon mystical experiences as exclusively “religious” or even “spiritual”.

9. Trait and State

Deep mystical experience is not easily attained, and is perhaps totally unattainable for most of us. Since our theory postulates a close connection between mystical experience
and mental absorption, the flip side of this observation is that deep absorption, too, is unattainable for most of us. That is to say, our faculty of concentration has a “ceiling” beyond which it cannot easily go.\(^{56}\)

At this point, it is necessary to point out that absorption is a well-known term in psychology, where it is most often used to refer to a personality trait. A scale has been developed to measure this trait, which covers various features, including hypnotisability: the Tellegen Absorption Scale (see also Jamieson (2005)). This particular trait is also known by the name dissociative absorption, and has been described in a recent publication in the following words (Soffer-Dudek 2019, p. 51):

Dissociative absorption is a tendency to become absorbed in imagination or in an external stimulus (movie, book) to the point of obliviousness to one’s surroundings and reduced self-awareness.

Dissociative absorption, we further learn, is “uniquely associated with [obsessive-compulsive] symptoms”. “Indeed, high absorption is correlated with psychopathological symptoms and distress, depression, anxiety, and psychoticism . . . as well as post-traumatic stress . . . ” (Soffer-Dudek 2019, p. 52)

The present article does not use the word absorption to refer to a trait, but rather, to a state; it is not, therefore, about the trait called “dissociative absorption”. Most unfortunately, trait absorption and state absorption are often confused in the literature.\(^{57}\) It may yet be significant that those who have the trait can more easily attain the state. This may go some way toward explaining that so many “normal” or “average” people, who may not have the trait, are denied access to a deep state of absorption.\(^{58}\)

This is not the place to ask why many people (presumably most of them) have a “ceiling” that prevents them from entering deep absorption. (It is no doubt pertinent to note that the evolutionary advantages of mystical experience may be limited, if there are any at all.) For our present purposes it is sufficient to understand that there is such a ceiling. However, this ceiling is not foolproof; it is “leaky”. Because of this leakiness, humans engage in various “religious” activities, as we have seen. We may legitimately ask if there would be religion without this leakiness, but this question cannot be dealt with at present.

More relevant to our present concerns is the observation that there appear to be ways to “break through” the ceiling. The methods that are used to attain (normally weak) mystical experiences—I mentioned prayer, meditation, communal dancing or singing\(^ {59}\)—become much more effective when carried out in combination with the ingestion of psychedelics. Research on the combined effectiveness of psychedelics, along with other ways to reach altered states of consciousness, is not yet very developed, but appears to confirm this.\(^ {60}\)

10. Conclusions

The transition, in early modern Europe, from a geocentric model of the universe (with a stationary earth at the centre) to a heliocentric model simplified the understanding of the movements of the planets. The present paper, similarly, proposes a change of perspective which simplifies the understanding of mystical experience. There is a tendency to try to understand mystical experience in terms of standard consciousness that is considered “normal”. However, it may make more sense to proceed in the opposite direction and try to understand standard consciousness in terms of the consciousness that reveals itself in mystical experience.\(^ {61}\)

Consider the following. Mystics may not experience the flow of time. Do we need to explain this, or rather, the fact that we do experience the flow of time in standard consciousness? Furthermore, is it possible that the sense of self in standard consciousness is more in need of explanation than its absence in mystical experience? And again, is it perhaps our ability to recognize things in standard consciousness that calls out for an explanation, rather than our inability to do so in mystical experience? Finally, the mystic finds it hard or even impossible to describe his experience in words. Does this need
explanation or is it, rather, the fact that in standard consciousness, we can describe our experience that needs to be explained?

These questions—and the last one in particular—make sense of our tendency to confuse experience and the statements that give expression to it (states and statements). We take it for granted that the ability in standard consciousness to express experiences in words also applies to mystical experience. It does not. This mistake would not have arisen if we had opted for the inverse direction of explanation: from the consciousness of mystical experience to standard consciousness.

With this in mind, we can look at other questions that are often raised about mystical experiences. Recall that the theory here proposed supports the idea that there can be, and presumably are, mystical experiences. It does not support the idea that statements that are supposedly expressive of those experiences can tell us anything about mind-independent reality.

What, then, are mystical experiences in terms of our theory? They are, briefly put, states of consciousness in which the factors that contribute to standard consciousness (essentially associations with other mental contents) have been reduced or even suppressed. Seen from the perspective of standard, “normal” consciousness, they are distinguished by those absences. (Seen from the perspective of deep mystical experience, standard consciousness is distinguished by the presence of those factors.) In comparison with standard consciousness, mystical experience cannot but be described in negative terms.

Since the same mechanism is at work in the “production” of mystical experiences wherever they take place, they are, in principle, independent of where and when they occur. (There can, of course, be differences in depths, but that is a different matter.) Note, however, that even where mystical experiences are the same (or similar), this cannot be said about the statements that are supposedly expressive of those experiences. To the extent that such statements concern mind-independent reality, they are not validated or justified by those experiences.

In and by themselves, mystical experiences do not clash with language, because language plays no role in their organisation as it does in standard consciousness. Trying to express these experiences in words is an attempt to impose aspects of linguistically organised standard consciousness on an experience that is without them. Such attempts are bound to fail, and mystics know this.

If, then, mystical experience is mainly negative, can mystics gain insights from it? I would say yes. By experiencing the weakening or disappearance of factors that play an essential role in the construction of standard consciousness, they can become aware of the constructed, conditioned nature of “ordinary” reality. Such an insight may not tell us all that much about the mystical experience (and nothing whatsoever about mind-independent reality), but quite a lot about standard consciousness.

Can we gain insight from the way of looking at mystical experience advocated in this article? Annette Wilke (Wilke et al. 2021, p. 7) draws attention to the mysticism debate that arose in the 1970s and 1980s around the nature of mystical experience—whether it was truly universal, the same everywhere, or socio-culturally constructed—and whose result, as she puts it, “was devastating, as it amounted to giving up mysticism research—at least in the Cultural Study of Religion”. She reminds us of the main details on the next page:

According to Steven Katz62 . . . as well as other ‘constructivists’ . . . pure, unmedi- ated experience simply does not exist. Each and every experience went through complex epistemological processes by which it was organised and shaped, and which made it communicable. Mystical experience, according to these critics, will always be prefigured and preconditioned by linguistic frameworks and the cultural context, the respective theologies and philosophies, the dogmas, social conditions, and pre-existing worldviews. What others had called interpretation was itself an ingredient of the experience.

It is clear that—if and to the extent that the theory presented in this article is correct—the position defended by Steven Katz and his fellow constructivists is mistaken. It does not
take into account the complex nature of human consciousness, some of whose components are not touched (or much less touched) by the factors that are co-responsible for standard consciousness. I hope that that position can now be laid to rest.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The author declares no conflict of interest.

**Notes**

1 Wulff (2014, pp. 369–70) sketches the way mysticism and mystical experience have been used from the 18th century onward. See also (Zarrabi-Zadeh 2008).

2 Annette Wilke (Wilke et al. 2021, p. 5) points out “that not only in popular discourse, but even among most of early scholars of mysticism, union, unity, unification, i.e., immediate unitive experience (unio mystica, ‘mystical union’) was very prominent in characterizing and defining universal mysticism. . . . many of them, however, were not interested in defining mystical experience as such, . . . Only later, when mysticism research had shifted to the Anglo-Saxon world, the nature of mystical experience itself became a common central question.”

3 See, e.g., (Franco 2018). For a different point of view, see (Osto 2019).

4 Indeed, Turner (1995) argues that medieval European mysticism is not based on mystical experience; see also (Kügler 2004).

5 Wilke (Wilke et al. 2021, p. 2), with references to earlier literature.

6 Smart (1967), too, does not hesitate to speak of the “timeless experience” of Eckhart, Teresa of Avila, Śāṅkara, and the Buddha that, he claims, “involves an apprehension of the transcendent”; see also Smart (1965, p. 75).

7 As maintained, for example, by Zaeßner (1957).

8 Hood (1975) developed a measure of reported mystical experience, Hood’s M-scale (see also Streib et al. 2021). Hood’s M-scale measures a personality trait, not the depth of a mystical state.

9 On essentialism, see Gelman (2003).

10 On the influence of memory on perception and subjective experience, see (Garner and Keller 2022; Lau et al. 2022).

11 Herzog et al. (2016); further Drissi-Daoudi et al. (2019). See also Manassi and Whitney (2022). On the experience of time passing more or less fast, see Wittmann (2013, 2018).

12 Buonomano (2017, p. 252 n. 11); with references to Scharnowski et al. (2009) and Sergent et al. (2013).

13 See Hood (2011). The sense of self plays a role in distinguishing between the own body and the outside world.

14 Christiansen and Chater (2022, p. 10), with a reference to Goldin-Meadow (2005).

15 Christiansen and Chater (2022, pp. 10–11), with a reference to Pyers and Senghas (2020).

16 One might hope to find similar testimonies in so-called feral children, children who have grown up without human contact. Unfortunately, few known feral children ever learned to speak, and the few that did (though imperfectly) have not recorded memories of their pre-linguistic experiences. See Candland (1993); https://en.wikipedia.org/wiki/Feral_child (accessed on 4 May 2022).

17 See http://markturner.org/blending.html (accessed on 10 June 2022).

18 Blunden refers to Vygotsky (1987–1999, vol. 5 (“Child Psychology”), pp. 207–41.

19 Bickerton (2009, p. 125) mentions the four great apes, Californian sea lions, Atlantic bottlenose dolphins, and African grey parrots. Barrett (2018, p. 260) points out that “words do not seem to be intrinsically part of most apes’ affective niche, as they are for typical human babies. To apes, words alone are not worth learning.”

20 Bickerton slightly modified his terminology in his more recent (and last) book More than Nature Needs (Bickerton 2014). Here, he uses the term “concept” also in connection with nonhuman animals, but asserts that there is a difference between nonhuman and human concepts. He still maintains “that a certain kind of thought probably limited to humans—thought that manipulates concepts of classes rather than of individual entities, that can transcend experience to create genuinely novel configurations—needed some kind of overt objects (signals or words) in order to get started.” (p. 103). Our conclusion that the experience of prelinguistic children is fundamentally different from ours remains the same.

21 It appears “that a unique context and selective pressure were responsible for the evolution of human language, given that no other primates have yet evolved a language-like communication system despite the fact that, arguably, they have the basic cognitive skills required and a similar genetic background to humans” (Szamádó and Szathmáry 2006, p. 556). For other attempts, see, e.g., Laland (2017, chp. 8); Planer and Sterelny (2021). All accounts of the invention of words seem to fit in well with the notion of joint attention as a feature distinguishing humanity from other primates, as proclaimed by Tomasello (e.g., Tomasello 2019) and others.

22 See, e.g., Caldwell-Harris (2019); Lupyan et al. (2020). For a discussion of the Sapir–Whorf hypothesis, see Leavitt (2014); O’Neill (2015). Evans (2014, p. 215 ff.) summarizes experiments that show that language already influences perception at pre-conscious and non-linguistic levels.
Without necessarily subscribing to his philosophy, Wittgenstein’s famous statements—“the limits of my language mean the limits of my world” and “whereof one cannot speak, thereof one must be silent”—come to mind (Wittgenstein 1922, pp. 5-7).

Losing one’s ability to use language, aphasia, does not take one back to a pre-linguistic state. One reason may be that “[i]n 99 per cent of aphasics the processing of language is damaged, but the memory for language is retained” (Hale 2007, p. 124, quoting Richard Wise).

Note that there was not always a word to designate states of absorption: “the Oxford English Dictionary indicates that written English usage of the term ['absorption'] to signify engrossment only became commonplace in the mid seventeenth century (along with the term ‘immersion’)” (Herbert 2019, p. 237).

Cp. Hood et al. (2009, pp. 354–55): “the wide diversity of triggers or conditions facilitating mystical experiences . . . may have in common the fact that an individual fascinated by any given trigger experiences a momentary loss of sense of self, being ‘absorbed’ or ‘fascinated’ by his or her object of perception.”

“Mystical experiences are absorbed states.” (Granqvist 2020, pp. 219–20).

There are many theories of consciousness. LeDoux (2015, pp. 146–79) provides a useful survey. See also Cobb (2020, chp. 15) (“Consciousness”). All these theories share a “commitment . . . to the proposition that the brain is the centre, cause, operating system, and seat of consciousness, mind, and mental life” (Grayling 2021, pp. 259–56).

For a recent discussion between Seth and Solms, see https://npsa-association.org/anil-seth-mark-solms-dialogue/ (accessed on 10 June 2022).

One might add Jaak Panksepp (e.g., Panksepp 1998; Davis and Panksepp 2018).

“The non-feeling, ‘precise’ contents of the mind flow with distinction, silhouetted against the affect process, a bit like acting figurines against an animated backdrop.” (Damasio 2021, pp. 78–79).

Seth (2021, p. 218) goes further: “At the very deepest layers of the self, beneath even emotions and moods, there lies a cognitively subterranean, inchoate, difficult-to-describe experience of simply being a living organism. Here, experiences of selfhood emerge in the unstructured feeling of just ‘being.’” On p. 220 he says: “the very deepest levels of experienced selfhood—the inchoate feeling of ‘just being’—seem to lack . . . external referents altogether. This, for me, is the true ground-state of conscious selfhood: a formless, shapeless, control-oriented perceptual prediction about the present and future physiological condition of the body itself.” Elsewhere (Webb 2022, p. 96), he describes the most basic aspect of conscious selfhood as “at the deepest level without any describable content at all.”

This suggests that brain injuries that affect such associations may result in similar experiences; see, on this, Cristofori et al. (2016).

http://www.bodysoulandspirit.net/mystical_experiences/ (accessed on 10 June 2022).

Carhart-Harris and Friston (2019, p. 319) mention “subjective phenomena associated with the psychedelic experience, including the following: ego dissolution . . . , . . . altered time perception . . . , a sense of the ineffable . . . ”

This is not to deny the importance of feelings, both for the mystic and from a theoretical point of view (see above). Already, William James ([1902] 1920, p. 380) stated: “. . . mystical states are more like states of feeling than like states of intellect. No one can make clear to another who has never had a certain feeling, in what the quality or worth of it consists.” See also Matilal (1975, pp. 218–219); Gáb (2021, p. 235).

(OLivelle 1998), Taṭṭīrīya Upaniṣad 2.4; Kaṭha Upaniṣad 5.14.

E.g., (de Jong 1977), Nāgarūjuna’s Mālamadhyamakakārīkā, 7.17: “If there existed anywhere something unarisen, it could arise. Since no such thing exists, what is it that arises?”

“Presumably”, because there is, of course, no way to prove that these three (Eckhart, Upanishads, Nagarjuna) had had no mystical experience. However, if not these three, there were, no doubt, others who had not.

As pointed out above, some (or even many) of these teachings can, at least in part, be explained in terms of the intellectual and cultural surroundings of their authors. However, the appeal of “mystical ideas” may have influenced the shape in which we find them in the relevant texts.

Is this what Damasio meant when he said: “In and of themselves, feelings are never memorized and thus cannot be recollected” (Damasio 2019, p. 141)? Clearly Damasio does not deny access to pure feeling: “The ebb and flow of spontaneous homeostatic feelings provides for an ever-present background, a more or less pure sense of being of the sort that those who practice meditation aspire to experience.” (cited above).

This implies that young children do not need absorption to remove the factors responsible for standard consciousness; those factors, quite simply, were not yet there.

Some scholars—most notably, Morrison and Conway (2010)—“consider a version of episodic memory (‘sensory-perceptive-affective’), which appears very early in life, and another version (‘conceptual episodic memory’), which appears later; . . . autobiographical is . . . considered by them to appear even later” (Staniloiu et al. 2020, p. 5).

It does not, to be sure, recall all the conscious experiences we ever had.

Tulving (1985, p. 3), with a reference to Ebbinghaus ([1885] 1913, p. 1).
If I am not mistaken, this opinion has not been contradicted in subsequent research; see Renoult and Rugg (2020). Rugg and Vilberg (2013) draw attention to “a content-independent network that acts in concert with cortical regions representing the contents of retrieval”. Could it be that the content-independent network remembers the experience itself?

Note that the memory we are interested in has nothing to do with remembering facts, people, things, relationships, and places, which is liable to infantile amnesia (on which see Alberini and Travaglia 2017; Peterson 2020).

Cf. Slingerland (2021, p. 97): “[A] common theme in cultures from across the world and throughout history is the idea of spiritual or moral perfection as somehow involving regaining the child’s mind. The Gospel of Matthew declares, ‘Truly I tell you, unless you change and become like little children, you will never enter the kingdom of heaven.’ An early Chinese Daoist text, the Daodejing or Laozi, compares the perfected sage to an infant or small child, perfectly open and receptive to the world.”

For a recent review of the evidence, see Zarrindat and Khakpai (2020); further Taylor (2013, pp. 1079–80).

Cf. Ott (2007, p. 262): “standards for the definition and assessment of states of absorption have not been established thus far.” See also Mohr (2018, pp. 118–19). Depth of absorption should not be confused with levels of consciousness, on which see Bayne et al. (2016). Is it possible that the correlation between pupil dilution and (depth of?) attention may open up ways to measure depth of absorption? See Zhao et al. (2019).

Hypnosis is one method and, unsurprisingly, “[f]orty per cent of hypnotized subjects describe it as an altered state of consciousness, while sixty per cent compare it to a period of focused attention” (Dietrich 2007, p. 269).

i.e., activities that are “deemed religious” (Taves 2009).

On different traditions of meditation in ancient India, see Bronkhorst (1993). On Asian traditions of meditation in general, see Eifring (2016).

Interestingly, there are reasons to think that psychedelics can help to attain far deeper states; see below.

Cf., e.g., Siegel (2005). Slingerland (2021) discusses the social consequences of the ingestion of certain drugs.

“Research reveals that mystical experiences are relatively common in the general population. Averaging across samples, nations, and methods, colleagues (Hood et al. 2009) estimate their lifetime prevalence to be roughly 35%.” (Granqvist 2020, p. 219). These numbers may easily make us overlook that mystical experiences may be more or less “deep”.

Cf. Bronkhorst (2022). Interestingly, Tellegen and Atkinson, the originators of the Tellegen Absorption Scale, already distinguish between the two, in the title of their relevant article (Tellegen and Atkinson 1974): “Openness to absorbing and self-altering experiences (‘absorption’), a trait related to hypnotic susceptibility.” Here, the trait is openness, the state is the experience. The word absorption is here used to refer to the experiences, not to the trait. Yet, “[i]n discussing imaginative involvement and absorption, for instance, … Tellegen … sometimes blurred together comments on trait and state notions of absorption” (Roche and McConkey 1990, p. 92). Note further that Mattes (2022, p. 6) speaks of “the widespread confusion between enabling conditions of flow and the flow experience itself.”

Assuming that many scholars are “normal” or “average”, this may throw light on the fact that some of them find it difficult to take mystical experience seriously. Indeed, “for a long time, extraordinary consciousness experiences have either been ignored by the mainstream natural sciences or have been explicitly denigrated as nonexistent—as the fantasies of cranks.” (Wittmann 2018, p. 2769).

More can no doubt be added. Lewis-Williams (2010, p. 143) adds auditory driving (e.g., chanting, clapping, drumming); electrical stimulation; flickering light; fatigue; hunger; sensory deprivation; stress; and extreme pain to this list. Maji and van Elk (2018, p. 1) enumerate sensory over-stimulation, sensory deprivation, mind-altering substances, magic tricks, extreme rituals, meditation practices, trying to recall memories of past mystical experiences, expectancy manipulations, and the so-called “God Helmet”.

For recent research on meditation combined with psychedelics, see, e.g., Griffiths et al. (2017); Smigielski et al. (2019); Heuschkel and Kuypers (2020); Eleftheriou and Thomas (2021). Mention should also be made of the Good Friday Experiment designed by Walter N. Pahnke and carried out in 1962. Psilocybin was administered to theology students in a prayer chapel. For details, see (Wittmann 2018, p. 2226; Baier 2021, pp. 382–88). Psychedelics have also found their way into Buddhist meditation: https://www.lionsroar.com/the-new-wave-of-psychedelics-in-buddhist-practice/ (accessed on 10 June 2022); (Osto 2016).

This “Copernican” reversal of perspectives has been preceded—in Kenneth Rose’s (2016, p. 62) terms—by the “anti-Copernican” reversal of perspectives in the study of mysticism instituted by Steven Katz more than forty years ago; see further below.

This refers to Katz’s influential article of 1978 (Katz 1978) and subsequent publications.

Katz’s claim that pure, unmediated experience does not exist, initially presented as an assumption or even a fact, became, over time, a working hypothesis and an epistemological generalization (Hammersholt 2013, p. 476). Katz does not present anything resembling proof for this claim which, in view of the theory presented in the present article, looks like a totally unwarranted assumption.

References
Alberini, Cristina M., and Alessio Travaglia. 2017. Infantile amnesia: A critical period of learning to learn and remember. The Journal of Neuroscience 37: 5783–95. [CrossRef]
Baier, Karl. 2021. High Mysticism: On the Interplay between the Psychedelic Movement and Academic Study of Mysticism. In Constructions of Mysticism as a Universal. Roots and Interactions Across Borders. Wiesbaden: Harrassowitz, pp. 363–96.
Barrett, Lisa Feldman. 2018. How Emotions Are Made. The Secret Life of the Brain. New York: Mariner Books.
Bayne, Tim, Jakob Hohwy, and Adrian M. Owen. 2016. Are there levels of consciousness? Trends in Cognitive Sciences 20: 405–13. [CrossRef] [PubMed]
Berkovich-Ohana, Aviva, Yair Dor-Ziderman, Joseph Glicksohn, and Abraham Goldstein. 2013. Alterations in the sense of time, space, and body in the mindfulness-trained brain: A neurophenomenologically-guided MEG study. Frontiers in Psychology 4: 912. [CrossRef] [PubMed]
Bickerton, Derek. 2009. Adam’s Tongue. How Humans Made Language, How Language Made Humans. New York: Hill and Wang.
Bickerton, Derek. 2014. More Than Nature Needs: Language, Mind, and Evolution. Cambridge: Harvard University Press.
Blunden, Andy. 2012. Concepts: A Critical Approach. Leiden and Boston: Brill.
Bronkhorst, Johannes. 1993. The Two Traditions of Meditation in Ancient India, 2nd ed. Delhi: Motilal Banarsidass, Reprint 2000.
Bronkhorst, Johannes. 2011. Language and Reality: On an Episode in Indian Thought. Leiden and Boston: Brill.
Bronkhorst, Johannes. 2017. Can religion be explained? The role of absorption in various religious phenomena. Method and Theory in the Study of Religion 29: 1–30. [CrossRef]
Bronkhorst, Johannes. 2021. The religious predisposition. Method and Theory in the Study of Religion 33: 187–227. [CrossRef]
Bronkhorst, Johannes. 2022. The role of absorption in making God real, Commentary on Luhrmann 2020. Religion, Brain & Behavior. [CrossRef]
Buonomano, Dean. 2017. Your Brain Is a Time Machine. The Neuroscience and Physics of Time. New York and London: W. W. Norton.
Caldwell-Harris, Catherine L. 2019. Our language affects what we see. Scientific American, January 15. Available online: https://www.scientificamerican.com/article/our-language-affects-what-we-see/ (accessed on 10 June 2022).
Candland, Douglas Keith. 1993. Feral Children and Clever Animals: Reflections on Human Nature. New York and Oxford: Oxford University Press.
Carhart-Harris, Robin L., and Karl J. Friston. 2019. REBUS and the anarcho brain: Toward a unified model of the brain action of psychedelics. Pharmacological Reviews 71: 316–44. [CrossRef]
Carroll, Lewis. 1872. Through the Looking-Glass, and What Alice Found There. London: Macmillan.
Christiansen, Morten H., and Nick Chater. 2022. The Language Game: How Improvisation Created Language and Changed the World. London: Bantam Press.
Cobb, Matthew. 2020. The Idea of the Brain. A History. London: Profile Books.
Cristofori, Irene, Bulbulia Joseph, John H. Shaver, Marc Wilson, Frank Krueger, and Jordan Grafman. 2016. Neural correlates of mystical experience. Neuropsychologia 80: 212–20. [CrossRef]
Damasio, Antonio. 2019. The Strange Order of Things: Life, Feeling, and the Making of Cultures. New York: Vintage.
Damasio, Antonio. 2021. Feeling & Knowing: Making Minds Conscious. New York: Pantheon.
Darwin, Charles. 1872. The Expression of the Emotions in Man and Animals. London: John Murray.
Davis, Kenneth L., and Jaak Panksepp. 2018. The Emotional Foundations of Personality. A Neurobiological and Evolutionary Approach. New York and London: W. W. Norton.
de Jong, J. W., ed. 1977. Nāgārjuna: Mūlamadhyamakakārikā. Madras: The Adyar Library and Research Centre.
Dietrich, Arne. 2007. Introduction to Consciousness: Neuroscience, Cognitive Science, and Philosophy. Basingstoke and New York: Palgrave Macmillan.
Donald, Merlin. 2001. A Mind So Rare: The Evolution of Human Consciousness. New York and London: W. W. Norton.
Drissi-Daoudi, Leila, Adrien Doerig, and Michael H. Herzog. 2019. Feature integration within discrete time windows. Nature Communications 10: 4901. [CrossRef]
Ebbinghaus, Hermann. 1913. Über das Gedächtnis. Untersuchungen zur experimentellen Psychologie. Leipzig: Duncker und Humblot. First published 1885.
Eifring, Halvor. 2016. Asian Traditions of Meditation. Honolulu: University of Hawaii Press.
Eleftheriou, Maria Eleni, and Emily Thomas. 2021. Examining the potential synergistic effects between mindfulness training and psychadelic-assisted therapy. Frontiers in Psychiatry 12: 707057. [CrossRef]
Evans, Vyvyan. 2014. The Language Myth: Why Language Is Not an Instinct. Cambridge: Cambridge University Press.
Fauconnier, Gilles, and Mark Turner. 2002. The Way We Think: Conceptual Blending and the Mind’s Hidden Complexities. New York: Basic Books.
Fauconnier, Gilles, and Mark Turner. 2008. The Origin of Language as a Product of the Evolution of Modern Cognition; Edited by Bernard Laks. London and Oakville: Equinox, pp. 133–56. Available online: https://ssrn.com/abstract=1556533 (accessed on 10 June 2022).
Franco, Eli. 2018. On the Arising of Philosophical Theories from Spiritual Practice. In Saddharmāngtam: Festschrift für Jens-Uwe Hartmann zum 65. Geburtstag. Edited by Oliver von Criegern, Gudrun Melzer and Johannes Schneider. Wien: Arbeitskreis für Tibetische und Buddhistische Studien Universität Wien, pp. 113–26.
Gäb, Sebastian. 2021. Mysticism without concepts. International Journal for Philosophy of Religion 90: 233–46. [CrossRef]
Garner, Aleena R., and Georg B. Keller. 2022. A cortical circuit for audio-visual predictions. Nature Neuroscience 25: 98–105. [CrossRef]
Gelman, Susan A. 2003. The Essential Child: Origins of Essentialism in Everyday Thought. Oxford: Oxford University Press.
Goldin-Meadow, Susan. 2005. The Resilience of Language: What Gesture Creation in Deaf Children Can Tell Us about How All Children Learn Language. New York: Psychology Press.
Gopnik, Alison. 2009. The Philosophical Baby. What Children’s Minds Tell Us About Truth, Love, and the Meaning of Life. New York: Farrar, Straus and Giroux.

Grangqvist, Pehr. 2020. Attachment in Religion and Spirituality: A Wider View. New York and London: Guilford.

Grayling, A. C. 2021. The Frontiers of Knowledge. What We Know about Science, History and the Mind. New York: Viking.

Griffiths, Roland R., Matthew W. Johnson, William A. Richards, Brian D. Richards, Robert Jesse, Katherine A. MacLean, Frederick S. Barrett, Mary P. Cosimano, and Maggie A. Klinedinst. 2017. Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *Journal of Psychopharmacology* 32: 49–69. [CrossRef] [PubMed]

Hale, Sheila. 2007. *The Man Who Lost His Language*. A Case of Aphasia, Revised ed. London and Philadelphia: Jessica Kingsley.

Hammersholt, Torben. 2013. Steven T. Katz’s philosophy of mysticism revisited. *Journal of the American Academy of Religion* 81: 467–90. [CrossRef]

Herbert, Ruth. 2019. Absorption and openness to experience: An everyday tale of traits, states, and consciousness change with music. In *Music and Consciousness 2: Worlds, Practices, Modalities*. Edited by Ruth Herbert, David Clarke and Eric Clarke. Oxford: University of Oxford Press, pp. 233–53. [CrossRef]

Herzog, Michael H., Thomas Kammer, and Frank Scharnowski. 2016. Time slices: What is the duration of a percept? *PLoS Biology* 14: e1002433. [CrossRef] [PubMed]

Heuschkel, Kristin, and Kim P. C. Kuypers. 2020. Depression, mindfulness, and psilocybin: Possible complementary effects of mindfulness meditation and psilocybin in the treatment of depression. A review. *Frontiers in Psychiatry* 11: 224. [CrossRef]

Hood, Ralph W. 1975. The construction and preliminary validation of a measure of reported mystical experience. *Journal for the Scientific Study of Religion* 14: 29–41, Reprint 2001. [CrossRef]

Hood, Bruce. 2011. *The Self Illusion*. London: Constable.

Hood, Ralph W., Peter C. Hill, and Bernard Spika. 2009. *The Psychology of Religion: An Empirical Approach*, 4th ed. New York: Guilford.

James, William. 1920. *The Varieties of Religious Experience: A Study in Human Nature*. Thirty-Second Impression. New York: Longmans, Green, and Co. First published 1902.

Jamieson, Graham A. 2005. The modified Tellegen absorption scale: A clearer window on the structure and meaning of absorption. *Australian Journal of Clinical and Experimental Hypnosis* 33: 119–39.

Jensen, Jeppe Sinding. 2011. Framing Religious Narrative, Cognition and Culture Theoretically. Edited by Armin W. Geertz and J. Sinding Jensen. London: Equinox Publishing, pp. 31–50.

Johansson, Sverker. 2021. *The Dawn of Language: How We Came to Talk*. London: MacLehose Press.

Johnson, Matthew W., Peter S. Hendricks, Frederick S. Barrett, and Roland R. Griffiths. 2019. Classic psychedelics: An integrative review of epidemiology, therapeutics, mystical experience, and brain network function. *Pharmacology & Therapeutics* 197: 83–102. [CrossRef]

Katz, Steven T. 1978. Language, epistemology, and mysticism. In *Mysticism and Philosophical Analysis*. Edited by Steven T. Katz. Oxford: Oxford University Press, pp. 22–74.

Keller, Helen. 1910. *The World I Live In*. New York: The Century.

Kügler, Denys. 2004. Denys Turner’s anti-mystical mystical theology. *Ars Disputandi* 4: 176–82. [CrossRef]

Laland, Kevin N. 2017. *Darwin’s Unfinished Symphony. How Culture Made the Human Mind*. Princeton and Oxford: Princeton University Press.

Lau, Hakwan, Matthias Michel, Joseph E. LeDoux, and Stephen M. Fleming. 2022. The mnemonic basis of subjective experience. *Nature Reviews Psychology*. [CrossRef]

Leavitt, John. 2014. Linguistic relativity: Precursors and transformations. In *The Routledge Handbook of Language and Culture*. Edited by Farzad Sharifian. London and New York: Routledge, pp. 18–30.

LeDoux, Joseph. 2015. *Anxious: The Modern Mind in the Age of Anxiety*. London: One World Publications.

Lewis-Williams, David. 2010. *Conceiving God: The Cognitive Origin and Evolution of Religion*. London: Thames & Hudson.

Lifshitz, Michael, Michiel van Elk, and Tanya M. Luhrmann. 2019. Absorption and spiritual experience: A review of evidence and potential mechanisms. *Consciousness and Cognition* 73: 102760. [CrossRef]

Lindquist, Kristen A. 2021. Language and emotion: Introduction to the special issue. *Affective Science* 2: 91–98. [CrossRef] [PubMed]

Lindquist, Kristen A., Lisa Feldman Barrett, and Liza Bliss-Moreau. 2017. Depression, mindfulness, and psilocybin in the treatment of depression. A review. *Frontiers in Psychiatry* 11: 224. [CrossRef]

Lindquist, Kristen A., Lisa Feldman Barrett, and Liza Bliss-Moreau. 2016. Time slices: What is the duration of a percept? *PLoS Biology* 14: e1002433. [CrossRef] [PubMed]

Lupyan, Gary, Rasha Abdel Rahman, Lera Boroditsky, and Andy Clark. 2020. Effects of language on visual perception. *Trends in Cognitive Sciences* 24: 930–44. [CrossRef]

Maij, David L. R., and Michiel van Elk. 2018. Getting absorbed in experimentally induced extraordinary experiences: Effects of placebo brain stimulation on agency detection. *Consciousness and Cognition* 66: 1–16. [CrossRef]

Manassi, Mauro, and David Whitney. 2022. Illusion of visual stability through active perceptual serial dependence. *Science Advances* 8: eabk2480. [CrossRef] [PubMed]

Maslou, George A., Pieter Roelfsema, Jean-Pierre Changeux, and Stanislas Dehaene. 2020. Conscious processing and the global neuronal workspace hypothesis. *Neuron* 105: 776–98. [CrossRef] [PubMed]

Matilal, B. 1975. Mysticism and reality: Ineffability. *Journal of Indian Philosophy* 3: 217–52. [CrossRef]
Mysticism and Philosophy

Olivelle, Patrick. 1998. *The Early Upanisads*. Annotated Text and Translation. New York and Oxford: Oxford University Press.

O’Neill, Sean P. 2015. The Sapir-Whorf hypothesis. In *The International Encyclopedia of Language and Social Interaction*. Hoboken: Wiley Online Library. [CrossRef]

Osto, Douglas. 2016. *Altered States: Buddhism and Psychedelic Spirituality in America*. New York: Columbia University Press.

Osto, Douglas E. 2019. Altered states and the origins of the Mahāyāna. In *Setting Out on the Great Way: Essays on Early Mahayana Buddhism*. Edited by Paul Harrison. London and Oakville: Equinox, pp. 177–205.

Ott, Ulrich. 2007. States of absorption: In search of neurobiological foundations. In *Hypnosis and Conscious States: The Cognitive Neuroscience Perspective*. Edited by Graham A. Jamieson. Oxford: Oxford University Press, pp. 257–70.

Panksepp, Jaak. 1998. *Affective Neuroscience: The Foundations of Human and Animal Emotions*. New York and Oxford: Oxford University Press.

Peterson, Carole. 2020. Remembering earliest childhood memories. In *Autobiographical Memory Development: Theoretical and Methodological Approaches*. Edited by Sami Gülgöz and Başak Şahin-Acar. London: Routledge, pp. 119–35.

Planer, Ronald J., and Kim Sterelny. 2021. *From Signal to Symbol: The Evolution of Language*. Cambridge and London: The MIT Press.

Pyers, Jennie, and Ann Senghas. 2020. Lexical iconicity is differentially favored under transmission in a new sign language: The effect of type of iconicity. *Sign Language & Linguistics* 23: 73–95. [CrossRef]

Radulovic, Jelena, Royce Lee, and Andrew Ortony. 2018. State-dependent memory: Neurobiological advances and prospects for translation to dissociative amnesia. *Frontiers in Behavioral Neuroscience* 12: 259. [CrossRef] [PubMed]

Renoult, Louis, and Michael D. Rugg. 2020. An historical perspective on Endel Tulving’s episodic-semantic distinction. *Neuropsychologia* 139: 107366. [CrossRef] [PubMed]

Rocche, Suzanne M., and Kevin M. McConkey. 1990. Absorption: Nature, assessment, and correlates. *Journal of Personality and Social Psychology* 59: 91–101. [CrossRef]

Rose, Kenneth. 2016. *Yoga, Meditation, and Mysticism: Contemplative Universals and Meditative Landmarks*. London: Bloombury.

Rugg, Michael D., and Kaia L. Vilberg. 2013. Brain networks underlying episodic memory retrieval. *Current Opinion in Neurobiology* 23: 255–60. [CrossRef]

Sarchnowski, Frank, Johannes Rüter, Jacob Jolij, Frouke Hermens, Thomas Kammer, and Michael H. Herzog. 2009. Long-lasting modulation of feature integration by transcranial magnetic stimulation. *Journal of Vision* 9: 1–10. [CrossRef]

Sergent, Claire, Valentin Wyart, Mariana Babo-Rebelo, Laurent Cohen, Lionel Naccache, and Catherine Tallon-Baudry. 2013. Cueing attention after the stimulus is gone can retrospectively trigger conscious perception. *Current Biology* 23: 150–55. [CrossRef]

Seth, Anil. 2021. *Being You: A New Science of Consciousness*. London: Faber & Faber.

Sharf, Robert H. 1995. Buddhist modernism and the rhetoric of meditative experience. *Numen* 42: 228–83. [CrossRef]

Sharf, Robert. 2000. The rhetoric of experience and the study of religion. *Journal of Consciousness Studies* 42: 228–83. [CrossRef]

Siegel, Ronald K. 2005. *Intoxication: The Universal Drive for Mind-Altering Substances*. Journal of Consciousness Studies 7: 267–87.

Siegel, Ronald K. 2005. *Intoxication: The Universal Drive for Mind-Altering Substances*. Rochester: Park Street Press.

Slingerland, Edward. 2021. *Drunken: How We Sipped, Danced, and Stumbled Our Way to Civilization*. New York, Boston and London: Little, Brown Spark.

Smart, Ninian. 1956. Interpretation and mystical experience. *Religious Studies* 1: 75–87. [CrossRef]

Smart, Ninian. 1967. Mysticism, History of. Available online: https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/mysticism-history (accessed on 10 June 2022).

Smigielis, Lukasz, Milan Scheidegger, Michael Kometer, and Franz X. Vollenweider. 2019. Psilocybin-assisted mindfulness training with compulsive symptoms. *British Journal of Clinical Psychology* 58: 51–69. [CrossRef] [PubMed]

Solms, Mark. 2021. *The Hidden Spring: A Journey to the Source of Consciousness*. London: Profile Books.

Stace, Walter Terence. 1960. *Mysticism and Philosophy*. London: MacMillan & Co.

Stalinou, Angelica, Andreas Kordon, and Hans J. Markowitsch. 2020. Quo vadis ‘episodic memory’?—Past, present, and perspective. *Neuropsychologia* 141: 107362. [CrossRef] [PubMed]

Streiβ, Heinz, Constantin Klein, Barbara Keller, and Ralph W. Hood. 2021. The mysticism scale as measure for subjective spirituality: New results with Hood’s M-scale and the development of a short form. In *Assessing Spirituality in a Diverse World*. Edited by Amy L. Ai, Paul Wink, Raymond F. Paloutzian and Kevin A. Harris. New York: Springer, pp. 467–91.

Szamadó, Szabolcs, and Eörs Szathmáry. 2006. Selective scenarios for the emergence of natural languages. *Trends in Ecology and Evolution* 21: 555–61. [CrossRef] [PubMed]

Taves, Ann. 2009. *Religious Experience Reconsidered: A Building-Block Approach to the Study of Religion and Other Special Things*. Princeton and Oxford: Princeton University Press.

Taylor, Annette Kujawski, ed. 2013. *Encyclopedia of Human Memory*. 3 vols. Santa Barbara, Denver and Oxford: Greenwood.

Tellegen, Auke, and Gilbert Atkinson. 1974. Openness to absorbing and self-altering experiences (‘absorption’), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology* 83: 268–77. [CrossRef]
Tomasello, Michael. 2019. Becoming Human: A Theory of Ontogeny. Cambridge and London: The Belknap Press of Harvard University Press.

Tulving, Endel. 1985. Memory and consciousness. Canadian Psychology/Psychologie Canadienne 26: 1–12. [CrossRef]

Turner, Denys. 1995. The Darkness of God: Negativity in Christian mysticism. Cambridge: Cambridge University Press.

Turner, Mark. 2014. The Origin of Ideas. Blending, Creativity, and the Human Spark. Oxford: Oxford University Press.

Vygotsky, L. S. 1987–1999. Collected Works. 6 vols. Edited by Robert W. Rieber and Aaron S. Carton. New York and London: Plenum.

Webb, Richard, ed. 2022. New Scientist Essential Guide No. 12: Consciousness. Understanding the Ghost in the Machine. London: New Scientist.

Wilke, Annette, Robert Stephanus, and Robert Suckro, eds. 2021. Constructions of Mysticism as a Universal. Roots and Interactions Across Borders. Wiesbaden: Harrassowitz.

Wittgenstein, Ludwig. 1922. Tractatus Logico-Philosophicus. London: Kegan Paul, Trench, Trubner.

Wittmann, Marc. 2013. The inner sense of time: How the brain creates a representation of duration. Nature Reviews Neuroscience 14: 217–23. [CrossRef]

Wittmann, Marc. 2018. Altered States of Consciousness: Experiences out of Time and Self. Cambridge: MIT Press, (Original title: Wenn die Zeit stehen bleibt.).

Wulff, David M. 2014. Mystical experiences. In Varieties of Anomalous Experience: Examining the Scientific Evidence, 2nd ed. Edited by Etzel Cardeña, Steven Jay Lynn and Stanley Krippner. Washington: American Psychological Association, pp. 369–408. [CrossRef]

Zaehner, Robert Charles. 1957. Mysticism, Sacred and Profane: An Inquiry into Some Varieties of Praeternatural Experience. Oxford: Clarendon Press.

Zarrabi-Zadeh, Saeed. 2008. Defining mysticism, a survey of main definitions. Transcendent Philosophy 9: 77–92.

Zarrindat, Mohammad-Reza, and Fatemen Khakpai. 2020. State-dependent memory and its modulation by different brain areas and neurotransmitters. EXCLO Journal 19: 1081–99.

Zhao, Sijia, Gabriela Bury, Alice Milne, and Maria Chait. 2019. Pupillometry as an objective measure of sustained attention in young and older listeners. Trends in Hearing 23: 1–21. [CrossRef]