

Cognitive Science and Spirituality

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The study provides description and discussion on research in cognitive sciences in regard to spirituality. Meditation research shows that long-term meditators can sustain high amplitude brain oscillations and phase-synchrony during meditation. Differences acquired during meditation can persist in the brain after formal practice and thus change everyday life. Intensive long-term meditation can result in increased cortical thickness, which can slow age-related thinning of the frontal cortex. Influenced brain areas are connected with attention, interoception, and sensory processing. Hypnotic suggestion can diminish unpleasantness of pain while its other qualities, including intensity, remain unaltered. Mind-wandering was found to decrease happiness during all activities. This uniquely human trait, which typically constitutes half of the human mind activity, correlates with the activity of the so-called *Default Mode Network*. This network can be quieted with the help of spiritual practices, which can result in the state which in many respects resembles awakening, enlightenment, and union with God. One case of such transformation is described using his own account of his path and current state of consciousness.

We currently still do not have the theory of everything: we do not know even the basic laws which operate in the universe in their complete form. Even if we had such knowledge, it could be, and very probably would be impossible to make exact and reliable deductions from it about more complex phenomena in our universe, like are, for example, many aspects of and processes in human mind, human beings and human society. Because of that, all extrapolations from even our best scientific theories which would want to say something about phenomena which do not belong to the domains which are exactly described by their respective theories, are at high risk of being wrong; and many of them therefore probably are wrong.

Because of this it may be wise not to accept any such extrapolations, which may pretend to be consequences of scientific theories, at least until we indeed have a final theory of everything and are able to logically and exactly deduce propositions in question from it. Even then it will be questionable whether we should accept them, for other reasons, but until this prerequisite is met, we have even more reasons to not accept them – or their negations – on the basis of scientific theories alone [1].

I want to illustrate this with one example. In the era of Newtonian physics, it seemed to many that since according to this theory the phenomena which it describes are fully determined by initial state and physical laws, all phenomena of the universe are fully deterministic. This was an extrapolation. From the fact that the Newtonian laws of motion predict with great precision the movement of heavenly bodies and other objects and thus seem to show their behavior as deterministic it was derived that everything is deterministic, including all that comprises us, humans; so our behavior seemed to these thinkers also to be fully deterministic [2]. But later, quantum physics was formulated, which shows material phenomena in a different light. Now I am not claiming that quantum physics, for example, implies or even suggests that we have free will in the sense which would defy both determinism and randomness, but this theory certainly states that phenomena of small scale it describes are not fully deterministic. Thus we can see that many have come to a wrong conclusions in the past, both in this case as in many others, when they made extrapolations from the domain of the theory (a sphere in which it is proved to describe phenomena with great precision) to the space outside of its domain. Therefore, it would be wise to be careful, because we know that today we still do not have the complete theory of the universe. We should be cautious in all our extrapolations from any scientific research, be it physics, biology (including evolutionary theory), psychology, cognitive sciences, and oth-



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ers. Perhaps it would be best to just not accept any such extrapolations or take them as inspiration only, an inspiration for the thinking, which is tailored primarily for a given sphere of experience; that is, thinking – and possibly perceiving, feeling and experiencing – that has as its main subject given sphere of experience. Because of this, I will try not to do such extrapolations, or at least admit their hypothetical nature. To say something about the domain of spirituality and mysticism on the basis of the knowledge or experience originating in these spheres themselves is another matter: although I think our human inner intuition, experience and “seeing” is subject to errors and illusions, the inner path of wisdom is not made impossible by this fact; just as science is possible, although it cannot exist without the senses, which are subject to errors and illusions, so also inner wisdom, that is, the knowledge of ourselves, is possible, I believe, although our intuition, inner sense and “seeing” of that, which we ultimately are is likewise subject to errors and illusions. My state-

ments belonging to these domains therefore have the status different from my extrapolations from science, although they are subject to errors and illusions too. Yet the fact that some source of knowledge is subject to errors is consistent with the possibility of knowledge and perception based on this source, like in science, so also in spirituality.

Research, I am going to present and discuss, comes from the field of cognitive sciences, which studies human cognitive capacities. It can be interesting or inspiring to those who are interested in spirituality and mysticism.

Let us start with the theme of meditation, which has an important place in spirituality. Meditation is now studied in cognitive sciences by using of scientific methods and various brain-scanning techniques. Lutz *et al.* (2004, 16369), for example, found that “*long-term Buddhist practitioners self-induce sustained electroencephalographic high-amplitude gamma-band oscillations and phase-synchrony during meditation. These electroencephalogram patterns differ from those of controls, in particular over lateral frontoparietal electrodes.*” The meditation training seems to be quite a powerful tool for changing the brain and its processes, as we can see from the fact that “*the high-amplitude gamma activity found in some of these practitioners are, to our knowledge, the highest reported in the literature in a nonpathological context.*” (Lutz *et al.* 2004, 16372).

Synchrony of the oscillations of neural activity is sometimes connected with the presence of consciousness. Moreover, ancient Buddhist texts of the *Pāli Canon* state that through the practice of meditation, unification of mind can be achieved. Can there be some relation between this and another observation of Lutz *et al.* (2004, 16372), which mentions broad synchronization across neural networks of the brain? “*Assuming that the amplitude of the gamma oscillation is related to the size of the oscillating neural population and the degree of precision with which cells oscillate, these data suggest that massive distributed neural assemblies are synchronized with a high temporal precision in the fast frequencies during this state.*”

We can also say that in some sense we can now objectively observe some aspects of the process of meditation in the brain and state that it is somehow connected to the specific forms of brain processes, because “[*t*]he endogenous gamma-band synchrony found here could reflect a change in the quality of moment-to-moment awareness, as claimed by the Buddhist practitioners and as postulated by many models of consciousness.” (Lutz *et al.* 2004, 16373).

Lutz *et al.* (2004, 16373) also report, that “*in addition to the meditation-induced effects, we found a difference in the norma-*

tive EEG spectral profile between the two populations during the resting state before meditation. It is not unexpected that such differences would be detected during a resting baseline, because the goal of meditation practice is to transform the baseline state and to diminish the distinction between formal meditation practice and everyday life.” In other words, the practice of meditation changes the processes in the brain long-term, as is also an explicit goal of many meditators and spiritual traditions. The practice should lead to inner change that perseveres after it and thus changes the whole life of the person, including its everyday aspects.

Attention, which is one of the core goals of contemplative life, can be deepened. This is not a mere subjective belief; there are some changes that can be objectively measured in the brain, and which seem to be connected to the quality of attention: “*Our study is consistent with the idea that attention and affective processes, which gamma-band EEG synchronization may reflect, are flexible skills that can be trained.*” (Lutz *et al.* 2004, 16373)

Lazar *et al.* (2005) did not focused on the long-term changes in brain processes but studied more “material” aspect of brain regions – their thickness. *Thickness* of a certain brain region suggests its more frequent use and greater development. Lazar *et al.* (2005, 1893) observed that “*brain regions associated with attention, interoception and sensory processing were thicker in meditation participants than matched controls, including the prefrontal cortex and right anterior insula.*” Note that the regions that were thicker are those connected with abilities meditation practice seeks to develop: attention, perception of stimuli from the outside world (sensory processing) and from body itself (*interoception*). Lazar *et al.* (2005, 1893) also found that thickness of said brain regions correlates with the length of practice, because “*between-group differences in prefrontal cortical thickness were most pronounced in older participants*”. They were also able to determine two brain regions whose thickness correlated with meditation experience. Moreover, they found that regular meditation practice may slow age-related thinning of the frontal cortex. We can summarize that the practice of meditation develops some parts of the brain to such extent that the results manifest in the thickness of these brain regions, indicating significant measure of development.

Other interesting results from the study of human mind concern the paradigmatic form of suffering, pain. In ordinary experience, intensity and unpleasantness of the pain seem to be inseparable, to be essentially connected or even to be the same aspect of it: you cannot have pain without suffering, or at least without unpleasantness in the case of not so intense

pain. Yet, many spiritual traditions and teachings report that due to meditative training, people are able to perceive pain without feeling as much suffering as is typical in human experience, or even without suffering entirely. Ordinary experience, on which ordinary thinking, but also, in most cases, philosophy, is based, can hardly arrive at such view. Yet, scientific research supports spiritual viewpoint in this respect. Rainville *et al.* (1997) used hypnosis to study whether sensory aspects of pain (perception of location, quality and intensity) can be separated from its affective aspects (unpleasantness). Let us note that hypnosis uses suggestion, which is, in the form of autosuggestion, probably one of the key parts of at least some forms of the placebo effect. This effect in turn seems to show, because of its scientifically verifiable results, influence which “mind has over matter”, that is, in some documented cases, astonishing in the eyes of ordinary experience [3].

Rainville *et al.* (1997, 968) explain that “*perceptual dissociation of sensory and affective aspects of the pain experience was achieved with hypnotic suggestions to both increase and decrease pain unpleasantness, without changing the perceived intensity of the pain sensations*”. They found that “*hypnotic suggestions for increased or decreased unpleasantness... altered both the perception of pain affect and the activation within some but not all of [specific] pain-related cortical regions*” (Rainville *et al.* 1997, 969). Primary somatosensory cortex activation, though, was unaltered. Activity in this brain region correlates with sensory dimensions of pain.

These findings do not prove that meditation can lead to lessened suffering in pain, but they open the possibility that affective component can be reduced even if sensory component is not. And if some meditation practices or methods aiming at spiritual transformation use suggestion or autosuggestion, these results point to one possible mechanism of reducing suffering in the presence of stimuli, which typically leads to it. I would like to emphasize that we should not look down on suggestion or autosuggestion and consider them to be something necessarily deceptive or delusional. Because the placebo effect is real and its effects can be beneficial, it is better to view suggestion and autosuggestion rather as a testimony to the power and importance of mind, and possibly also of its priority over matter. Primacy or at least key importance of mind and its development in general is recognized in many spiritual traditions and teachings. And when we look at some specific forms of spiritual practice like repeated affirmations, negations (for example, “I am not this body”) and questions (“Who am I?”), we can speculate whether what can look like autosuggestion is some kind of self-deception, or whether it can contain deeper truth or open the

mind to it (perhaps using thoughts to create some opening in thoughts themselves).

In spirituality, there is sometimes distinction made between the so called “Ego” and the “Self”. Ego is connected with our personal life-story, while the Self “lives in the present”; it can even be understood as the “Presence itself”. As probably the clearest example of this approach, we can mention Eckhart Tolle and his teaching, as he expressed it in his books *The Power of Now* (2004), *A New Earth* (2005), *Silence Speaks* (2003), and others. There are similarities between this concept and a distinction between narrative and momentary self-reference described and studied by Farb *et al.* (2007), who state that the *narrative self-reference* is linking experiences across time, while the *momentary self-reference* is centered on the present. With respect to these two modes of self-reference they distinguish between enduring traits of *narrative focus* (NF) and *experiential focus* (EF).

In their study, Farb *et al.* (2007) compared two groups of participants: one group went through an eight-week course in *mindfulness meditation*, which aims on training the individual to develop attention on the present (“trained participants”), while the other did not (“novices”). Farb *et al.* (2007, 313) report that experiential focus “*yielded focal reductions in self-referential cortical midline regions... associated with NF*.” This points to the fact that these two kinds of focus are indeed different from each other and if trained, they tend to supersede each other. “*These results suggest a fundamental neural dissociation between two distinct forms of self-awareness that are habitually integrated but can be dissociated through attentional training: the self across time and in the present moment.*” (Farb *et al.* 2007, 313).

Typically functioning human brain expresses these two kinds of focus as mingled together: in our flow of consciousness we at some moments perceive what is happening now and in other moments we relate to our past and future and inwardly “comment on it”. But both of these modalities can be trained. We can train ourselves to be present in the now, but also to relate to our personal story, to past and future, to possible scenarios of events and so on. In real life, we train ourselves in both of these modalities, but from my experience it seems that as we grow up, we tend to train ourselves (unconsciously) more in the narrative focus and thus we build strong narrative self-reference over time. But sometimes we also have to be present, and thus the capacity to be aware of the present moment never dies out. For example, based on my observations, but also on observations of others, in the moment of ordinary sense perception, there exists a short period of time (typically it seems to last for a fraction of a second) in which

we are not thinking. In this short period of time we are aware of what the senses are showing us – we just perceive [4]. It seems to me that even sensory perception requires a temporary halt of thinking (thinking in the form of inner monologue or comment, or a “typical full-blown thought”). We are coming back to the present moment many times a day (it seems to me that this “return to the present” happens in most cases at least every few seconds), just because of the need to be aware of the sensory perceptions of the outer reality and of our body [5]. Thus, the experiential focus is never wholly forgotten and replaced by narrative focus, because of the necessities of life, and our ability of momentary self-reference does not wholly die out. In contemplative life, this seed can be then picked up and nourished by various methods (and also without methods), like are different kinds of meditation and contemplation. The interesting aspect of the study of Farb *et al.* (2007) is that their findings correlate with some of “knowledge” accumulated in spirituality; we can see that the brain is changed according to our inner and outer experience with ourselves. Inwardly perceived transformation and transformation of behavior is in a certain sense mirrored also in the state of the brain. We should note that this transformation of behavior is also available for scientific study, although we can see these changes without the aid of science too – and use this experience and knowledge in the spiritual domain directly.

Farb *et al.* (2007) also found areas of the brain, which had greater association with narrative condition (*Posterior Cingulate Cortex, Dorsomedial Prefrontal Cortex*) and those that had greater association with experiential condition (*Posterior Parietal Cortex, Lateral Prefrontal Cortex*) in the “novices”. They also report changes in the brain due to meditation practice: “Following an intensive eight week course in mindfulness meditation, during which individuals learn to develop the capacity to monitor moment-to-moment experience, EF resulted in a pronounced shift away from midline cortices towards a right lateralized network comprised of the ventral and dorsolateral PFC [Note: Prefrontal Cortex], as well as right insula, SII [Note: Secondary Somatosensory Cortex], and inferior parietal lobule” (Farb *et al.* 2007, 319). They describe their findings as consistent with the concept of two modes of self-reference (Farb *et al.* 2007, 319):

Consistent with a dual-mode hypothesis of self-awareness, these results suggest a fundamental neural dissociation in modes of self-representation that support distinct, but habitually integrated, aspects of self-reference: (i) higher order self-reference characterized by neural processes supporting awareness of a self that extends across time and (ii) more basic momentary self-reference characterized by

neural changes supporting awareness of the psychological present. The latter, represented by evolutionary older neural regions, may represent a return to the neural origins of identity, in which self-awareness in each moment arises from the integration of basic interoceptive and exteroceptive bodily sensory processes [...]. In contrast, the narrative mode of self-reference may represent an overlearned mode of information processing that has become automatic through practice, consistent with established findings on training-induced automaticity.

From the evolutionary standpoint, the momentary self-reference seems to be older and narrative reference newer, more connected with specifically human traits. In this connection, we can point out that in many spiritual teachings, nature and beings other than humans are said to live in the present, while humans are described as beings that lost this primordial state. But the return to the life in present can maybe be united in some way with thinking and its advantages. Based on the experiences from spirituality it seems that we humans can be more present than we typically are and at the same time let go of at least those forms of thinking which are not productive and cause more suffering and which generally bring more harm than good. In this regard I would like to again point out that there also exist contemplative practices which use thinking and speech in order to reach transformation. It seems that thinking also can facilitate awareness; we, as humans, maybe can use also our thinking and our concepts, as well as our feelings and other experiences, to penetrate deeper. Consider various mantras and prayers which use words or sentences: human concepts themselves seem to be filled with meaning from deeper inner knowledge, transcending formal symbols, and thus they perhaps can be used in order to know that inner realm whose knowledge they contain [6].

The concept of the difference between the Ego and the Presence seems to be supported, at least in part, also by the research of the so called the *Default Mode Network*. This network consists of brain centers which support self-referential processing and its activity correlates with mind-wandering (Mason *et al.* 2007; Andrews-Hanna *et al.* 2010). In their study, Killingsworth and Gilbert (2010, 932) concluded that “*human mind is a wandering mind, and a wandering mind is an unhappy mind. The ability to think about what is not happening is a cognitive achievement that comes at an emotional cost.*” Their conclusion is based on the study, which used experience sampling. Using this method they accumulated a database that contained a quarter of a million samples from about five hundred people of different age and occupation from 83 countries (Killingsworth and Gilbert 2010). They found that

mind-wandering occurred in 46,9 % of the samples. According to their results, people were less happy when their minds were wandering. Interestingly, this was true for all activities they did, including the least enjoyable. They also report that *“what people were thinking was a better predictor of their happiness than was what they were doing”* (Killingsworth and Gilbert 2010, 932).

Because of all this and other reasons, Brewer *et al.* (2011, 20254) posed a question: *“Given the interrelationship between the DMN [Note: Default Mode Network], mind-wandering, and unhappiness, a question arises: Is it possible to change this default mode into one that is more present-centered, and possibly happier?”* They state that mindfulness meditation can represent a method how to achieve such a change.

Although three kinds of meditation they studied – *Loving-kindness meditation, Concentration meditation, and Choiceless awareness* – to some extent differed in regard to activation of brain centers, Brewer *et al.* (2011, 20254) found that *“the main nodes of the default-mode network (medial prefrontal and posterior cingulate cortices) were relatively deactivated in experienced meditators across all meditation types”* and that these meditators *“reported less mind-wandering during meditation relative to controls”* (Brewer *et al.* 2011, 20255). Their results suggest that *“the neural mechanisms underlying mindfulness training are associated with differential activation and connectivity of the DMN”* (Brewer *et al.* 2011, 20255). They also support the hypothesis that *“alterations in the DMN are related to reduction in mind-wandering”* (Brewer *et al.* 2011, 20255).

We have seen from other studies that meditation practice can have lasting results that reach beyond formal meditation. In the case of *Default Mode Network*, the state in which this network’s activity subsided can, as a result of intensive long-term practice, extend to everyday life *“the consistency of connectivity across both meditation and baseline periods suggests that meditation practice may transform the resting-state experience into one that resembles a meditative state, and as such, is a more present-centered default mode”* (Brewer *et al.* 2011, 20255). An interesting case of such transformation was found as part of the research of the study just described. One of the subjects of this study, which listed highly accomplished meditators, was different in that his *Default Mode Network’s* activity was very quiet not only during meditation, but also before meditation (Wright 2017, 167).

I would like to close this article with the brief description of the path and transformation, which this subject of the study just described, went through, because in him, the *Default Mode Network* seems to be quiet almost perpetu-

ally. The name of this researcher is Gary Weber. In his own short account of his transformation (Weber 2015, 1), to which he often refers to as “the turning of the page”, he described his efforts leading to it in these words: *“Two hours/day early-morning practice and retreats and teachers’ training programs, in both meditation and yoga, totaling about 20,000 hours.”* This practice included letting go of every attachment, because, *“as the practice deepened, it was apparent that ‘attachments’ were where the last vestiges of the ‘I’ were being held. Wherever there was an attachment, it was clearly seen that there was an I/me/my at the root of it as the core around which it was structured. Each attachment also clearly had its ‘own’ separate I/me/my. So what was then required was to go through every attachment, and surrender each one”* (Weber 2015, 2). These attachments were connected with narrative aspect of mind-activity: *“The approach was to focus on each attachment and its particular story, or stories, feel into it, and then let go of it. This continued until all that was left was attachment to my two daughters. That step was delayed until it was apparent that they were secure and would not suffer from whatever might happen, as there was no certainty what would occur when the final attachment was gone. There was even the fear that this body would die without thought and the ‘I.’”* (Weber 2015, 2). That did not happen, though. The effort towards enlightenment continued, because *“even after this surrender, there remained a little vestige of an I/me/my, which could be felt. It was not clear who/how to surrender it to ‘nothingness/emptiness’. The solution that manifested was to have some entity come and take it away... the entity that it was surrendered to was Ramana Maharshi”* (Weber 2015, 2), a well-known Indian sage who lived in twentieth century [7]. Then, *“two or three days later, during the typical morning sequence of yoga postures focusing on the affirmation ‘I am not this body’, going into an inverted posture that had been done thousands of times before, everything changed dramatically when coming down. There was no blinding flash of light, no chorus of angels, etc., but the ‘I/Ego’ had disappeared like a leaf had slipped from a hand, and there was just deep stillness, silence, now and presence. There was the clear, unmistakable, direct perception that this was ‘It’. It had been expected that the internal narrative thoughts would diminish considerably, as that was the goal after all, but it was a jolt when they just STOPPED, along with all self-referential fears, desires and suffering.”* (Weber 2015, 2).

Narrative thoughts and self-referential fears and desires seem to be connected to the activity of the *Default Mode Network*, so it makes sense that now this network is so quiet in Gary Weber’s brain. I do not want to claim that whatever enlightenment, awakening, or how we want to call it, is, is just the activity of *Default Mode Network*, but there seems to be a connection between this brain’s structure’s strong activity

and the life of suffering dominated by the “story”, “past and future”, “I”, desires, fears and “negatively affective” self-reference.

Gary Weber reports qualities of his new state of being that were surprising to him. They manifested also in his professional career, which had nothing to do with spirituality or mysticism. That day when his “shift” occurred, there were around a thousand people, “*four research laboratories and a budget of about \$250 million for which ‘I’ was responsible, and work had to take place that day without an ‘I’*” (Weber 2015, 2). But everything went well, and, “*as the days went on, work and ‘my life’ were actually going on without ‘me’. The work was much more creative, useful and insightful, as there was full and complete awareness in every meeting, whether it was with the CEO, peers, researchers, customers, analysts, etc.*” (Weber 2015, 2–3). When he attended meetings at work, he observed that “*no one else was actually there for the whole meeting, fully present in every moment to body language, voice inflection, and presentation details. They were somewhere else in their minds for most of the meetings*” (Weber 2015, 3).

Gary Weber now views free will and control as non-existent: “*‘my life’ was functioning perfectly without ‘me’... something, whatever one wants to call it, was somehow ‘doing’ my life and arranging all sorts of amazingly serendipitous and fortunate meetings, events, activities, etc. and always had been. ‘Free will’, control, choices and ‘doing’ were something that ‘I’ was totally certain that ‘I’ had and did... however, it was clear that this was a complete and total illusion, and always had been.*” (Weber 2015, 3). He reports no fear, though, stemming from the fact that he no longer perceives free will, control, or choice: “*Far from being terrifying and causing mind-numbing anxiety, the recognition that there was no ‘free will’, ‘control’ or ‘choice’ was one of the most amazing, freeing and enabling understandings that could be imagined. All of the guilt, and pride, which had been so skillfully installed by religion, culture, institutions, teachers, etc., just fell away.*” (Weber 2015, 3) Yet he experiences directly something benevolent and loving, which carries him now: “*This truly was ‘freedom’ beyond anything that could have been imagined. There was no sin, no karma, no good deeds and no bad deeds. Something benevolent and loving was guiding and holding ‘me’ and had been doing so all along. When there was a little surrender, there was a feeling of being held a little. When there was more surrender, there was a feeling of more care and support. Now, with no ‘I’ to hold on to anything, and with no alternative but total surrender, there was complete love, support and compassion.*” (Weber 2015, 3).

I included many citations of Weber in order to show how this transformation of consciousness is experienced by the one transformed and how it can change his or her life. It is good, I think, to be aware of what this scientific research tries to study, although it cannot at present, and possibly ever, penetrate to the infinite depth of the Goal. But the Goal is dynamic and alive. I will therefore end with the Weber’s description of life in this dynamic field of bliss, fullness, connection and unity (Weber 2015, 4):

There is, therefore, no end to the deepening, although there is no one ‘doing it’ – the brain, in its continual drive for efficiency, neural real estate optimization and minimal energy consumption – does it ‘all by itself’ as it strongly prefers stillness and order to suffering, ‘blah, blah’, anxiety, fears, etc. As Harada Roshi, a famous 19th/20th century Japanese Zen master said, ‘Enlightenment is capable of endless enlargement.’

Early every morning, what would look to others like a practice, still emerges, in a spontaneous combination of yoga asanas, breathing practices/pranayama, sitting meditation, walking meditation, chanting, self-inquiry, affirmations, negations, bhakti, spontaneous posture flows, etc. Even more surprisingly, every morning something new is disclosed... a key is turned in a lock in a door that wasn’t even known to be there. Just when it seemed as if nothing could be sweeter, more still, more complete, more present... it deepens.

Notes

- [1] Theory of everything is usually understood as theory in physics, and as such it is concerned with the phenomena which have to be convertible to the data of the bodily senses (such conversion is done with the combined help of scientific measuring instruments and scientific theories). But if not, all that is, is convertible to these data, theory of everything in this sense may not be sufficient for deriving consequences concerning all spheres of experience.

- [2] There can be an assumption that they would predict the phenomena they describe with perfect precision if we had absolutely precise data. This is an idealization, because in practice we will never have them. Thus, we will never know whether beyond our errors of measurement phenomena are fully deterministic even if according to our best theory they are.
- [3] Joe Dispenza describes many such seemingly miraculous cases in his book *You Are the Placebo* (2014).
- [4] Categorization in the sense of understanding what we perceive seems to be present, but the labeling with inner verbal comment, as also other activities of this “voice in the head”, are absent.
- [5] Perceptions of our body and of outer environment go on even if we are immersed in the inner verbal behavior; generally, we can be either aware of them or not. They even seem to be, at least for a short period of time, stored in the memory even in the moments we are not aware of them, because we may access them through it in retrospect: after the moment of realization that we had a thought, we may become aware that the present sensory perception was here before, in the time we were not aware of it, and in which we were immersed in the thought we just realized we had.
- [6] For example, the word “consciousness” seems to carry, at least for many people, some direct knowledge of ourselves, which is activated also in the moment when we use the concept of consciousness by thinking. Since we need not to have the formalization of this concept, it can still contain some experiential content. This may be true for those who were not able to find theoretical explanation of consciousness, because they compared all theoretical constructs of consciousness with direct experiential content of its concept and saw that it was not grasped by that theoretical understanding. In this case there seems to remain an access to what the term means even in the presence of activation of its concept, because this concept itself carries experience of consciousness. For others, words like “I”, “I am”, and others, may still carry experience of what we really are; especially when the experiential content was not replaced by some theoretical construct. In the case of such replacement we no longer activate experience when using concept; we activate the theoretical construct instead.
- [7] At the time of the event just described, Ramana Maharshi was already dead. This event was an inner act of surrender of Gary Weber, which does not presuppose their actual meeting.

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