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**Neuroscience and Phenomenology.
A phenomenological-empirical investigation of religious experience**

PHD THESIS SUMMARY

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Key concepts: phenomenology, reduction, epoché, nirodha, neuroscience, religion, meditation, neurophilosophy, mindfulness, intentionality, temporality, consciousness, MRI, transcendental, phenomenon, empirical, psychology, object, Husserl, Patañjali, Śankarācārya

In the PhD thesis titled *Neuroscience and Phenomenology. A phenomenological-empirical investigation of religious experience*, I proposed a non-reductive approach between phenomenology and neurosciences, expressed by the phrase "non-reductive neurophilosophy". Neurophilosophy becoming more recent, through the works of Patricia Smith Churchland from 1989, a series of ramifications, in terms of research, arose from this concept. As Phillip Klar describes, neurophilosophy is a controversial scientific discipline that lacks a universally accepted definition and a highly developed methodology.

By following the phenomenological program established by Husserl – more precisely the method of phenomenological reduction that rests on a new conception of consciousness, through what constitutes a new universality in every field of human creation, I correlated phenomenological theories with the concepts on which the neurophysiological theories are based in their experimental methods

From a constitutive phenomenology viewpoint, objects are given to us in our perception, according to their intentionality or that which they generate. As an indispensable condition for our philosophical approach, the world appears to us in its natural attitude as a world that we discover through our perceptive experience. The phenomenological description places us in front of an infinite corpus of themes that can be studied in order to clarify them. I carry out this exercise of clarification in order to understand a wide spectrum of religious experiences, as far as the framework of the work allows us, from the point of view of constitutive phenomenology, which is interested in the ways in which objects are articulated as objects of one kind or another, participating at the final construction of a constitutive world (Copoeru, Aparență și sens, 9).

Because constitutive phenomenology does not pursue validity but deals with the detailed description of the way in which we perceive the objects that are given to us in the plane of consciousness, we did not consider the establishment of validity regarding the experiences of a spiritual or religious nature discussed in this work. I have followed the way in which the phenomenon occurs and the impact it has on the lives of individuals from a phenomenological perspective and from a neuroscientific perspective in order to create a unity between the two disciplines, initially taken as separate. These findings will eventually come together under the framework of the non-reductive neurophilosophy concept.

To get here, I have covered several topics extensively in the 6 chapters of this work. In the first chapter entitled **A phenomenological approach of history of religions**, I analyzed religions and their history from a phenomenological point of view, in a non-discriminatory way, being interested in the religious experience in general, in the same way that Mircea Eliade usually refers to, either that it is also known by other phrases such as spiritual experiences, transcendental experiences, meditation etc.

I followed the religious phenomenon as it has unfolded throughout history and as other philosophers, phenomenologists, and historians of religion have pursued it. I found it appropriate to clarify on this occasion the term phenomenology, as it was encountered in history and captured in various texts, but also that of phenomenon, described by Alexander Schnell.

In this chapter I have shown the connection between religion, phenomenology and religion and the capture of the transcendental element or phenomenon and the references to it in written religious texts, some even before several thousand years BC, provide us with the necessary data to continue our investigations.

In the second chapter, **Comparative Analysis between Transcendental Philosophy and Meditation**, I focused in particular on Husserl's *Cartesian Meditations* and Patañjali's *Yoga-Sūtra*, tracing the similarities between phenomenological reduction and yoga-type meditation by joining epoché–nirodah concepts (also highlighted by Puligandla in 1970) and the way in which both meet at the common point of an exercise that requires suppression of mental oscillations or a specific detachment from the natural attitude. The chapter includes a synthesis of Husserl's reduction, with all three stages described by him, epoché, phenomenological reduction and transcendental reduction, with emphasis on the first of them, these three also joining their correspondent regarding the three stages described by Patañjali, dhāranā, dhyāna and samādhi. In addition to these, I've spoken about some linguistic aspects that highlight the differences between Indian and modern culture, as recorded by Sergiu Al-George, seeking to establish a dialogue between East and West. We do not exclude that Husserl was inspired in the composition of his system by Buddhist philosophy, because in a manuscript from 1926, with the title *Socrates-Buddha*, Husserl speaks of Buddhism as an ethical-religious method of spiritual purification and pacification at the level of a high merit. He speaks of this method as being practiced with almost incomparable internal coherence, together with an energy and nobility of mind. Husserl also declares that Buddhism can only be compared with the highest formations of the religious and philosophical spirit of European culture. He proposes a future contrast between the Indian spiritual path which is something new for us and the old path which he calls "the usual path of Europeans" and through this contrast he wishes

for a revitalization and a strengthening of our usual way of seeing things (LAU, Kwok-Ying, Husserl, *Buddhism and the Problematic of the Crisis of the European Sciences*, 228).

This clash between the two ways – the Indian spiritual one and the European culture that originates from Greek thought – reminds of Sergiu Al-George, who in *Indian Language and Culture*, describes the same approach as presented by Husserl, enumerating the obvious differences between Indian and European thought. In that manuscript, Husserl summarizes his understanding of the similarities between Socrates and Indian thought, his question being whether Indian thought produced a science of being, or at least acknowledged the possibility of its development, in the same way that it had developed techniques of touch of bliss/ecstasy.

In the third chapter, **The Concept of Mindfulness**, I presented the most recent definitions and meanings of the term mindfulness – particularly as related to the therapeutic practice of Psychology – and highlighted the connection with thousands-years-old meditation techniques, such as those incorporated in yoga and Buddhism. The introduction of mindfulness in the therapeutic context has acquired a double valence due to various experimental studies conducted in the last few decades and the scientific recognition of religious-meditative acts. As such, a number of similarities as well as differences between mindfulness and Husserl's reduction can be pinpointed. In another subsection I presented the results of experimental studies regarding mindfulness as a therapy that drives health outcomes. Echoes of meditation in mindfulness are thereby reintegrated into the current therapeutic context. This integration is becoming more and more widely accepted following scientific studies and experiments carried out in the field of psychology.

By highlighting the way in which concepts that have surfaced over the last few decades, due to advances in current psychology, find their roots in thousands-years-old religions, I was able to reach a correlation with Husserl's method of reduction.

In the fourth chapter, **Intentionality between Husserl and Śankarācārya**, I explained the concept of intentionality in Husserl through the lens of other phenomenologists who have previously analyzed the issue, so as to offer a short history of the concept's development, while in another subchapter I attempted to draw a series of similarities as regards the concept of intentionality between the two authors, noting that Śankarācārya, creator of the Advaita Vedānta doctrine, was born in 700 BC. My investigations have revealed that intentionality is closely related to the concept of consciousness but also to temporality and perception, and therefore one is not able to talk about either of these without any reference to the others.

In this section I have shown how the question of intentionality transgresses different philosophies, approaches and cultures over time, thus receiving great interest from even some of the most illustrious practitioners of various Indian religious systems.

In the fifth chapter, **Temporality and Religious Experience**, I focus on the concept of temporality in Husserl from Nicolas de Warren's perspective, while in other subchapters I analyze the sensation of time passage in religious experiences, along with the notion of 'messianic time' in Agamben.

I have shown how meditation or presentified reduction is conditioned by the continuous passage of time, having tried to better understand the constitution of the present moment and the concepts of 'past' or 'lost' present time. A connection between Husserl's temporality and various transcendental experiences is made through the way in which the latter are constituted in the moment of the passage of time, their effect on individuals after returning from that present which then becomes 'past' occurring in a similar way to how one returns to the natural attitude after performing the reduction.

In the sixth chapter, **Neurophilosophy and Transcendental Experiences**, I present the concept of neurophilosophy as introduced by Churchland, while also providing a synthesis of the philosophical and psychological theories that preceded the concept's development – among which Cartesianism, localisationism, logical positivism, empiricism, naturalism, reductionism, Popper's theories of reductionism, physicalism etc., alongside Husserl's phenomenological theories.

Neurophilosophy has gained momentum ever since the naturalization of philosophy as part of its prerequisites. Therefore, the concepts it draws upon – such as consciousness, self, and free will – are also of great interest to philosophers.

The basic principles regarding the possible connection between neuroscience and philosophy (as per Klar, *What is neurophilosophy: Do we need a non-reductive form?*, 2702) are:

- Naturalization of philosophy;
- Branches of philosophy and linkage to empirical sciences;
- Philosophical and empirical methodology; and
- Stance towards the brain and mind or consciousness.

In the subchapter titled *Neuroimaging findings of transcendental experiences* we select a number of empirical investigations from the entire existing literature on the topic, such as the results reported by Metzinger and Gamma in the article "The Minimal Phenomenal Experience questionnaire: Towards a phenomenological profile of «pure awareness» experiences in meditators" or those outlined by John Hick in his book, *The New Frontier of Religion and Science: Religious*

Experience, Neuroscience and the Transcendent. Magnetic resonance imaging (MRI) allows for a specific activation of certain areas in the brain to be observed during religious experiences, ranging from various forms of meditation, yoga, vipassana etc. to the practices of Buddhist monks or Franciscan nuns.

In the last part of the chapter that also expresses the fundamental idea and purpose of this work, as mentioned at the outset of our presentation – namely, *Is a non-reductive approach to Neurophilosophy possible?*, we present the three recently outlined directions of neurophilosophy: 1. **the reductive approach** in which theories are reduced to brain activity, and as such mostly rely on results of MRI investigations or other computerized data, although fundamentally deriving from the philosophy of neuroscience; 2. **the parallelism between philosophy and the neurosciences**, the two remaining separate or well demarcated even within the philosophy of science, and 3. **the non-reductive approach** which is bidirectional, complementary and does not fall into an extreme form of neural reductionism, as per Philipp Klar, since it draws on both theoretical and obvious-empirical streams. Supporting this last approach is the 1819 work, *The World as Will and Representation* by Schopenhauer, who is considered by Northoff and Göhmann to be the first neurophilosopher for having explicitly introduced the brain into philosophical inquiry, leading to a mind-based rather than a brain-based approach. Meanwhile, owing to his major work *Phenomenology of Perception*, Merleau-Ponty is considered one of the fathers of neurophilosophy, having established a relation between brain and body, perception and imagination. Karl Popper also argued for a substantial ontological dualism between mind and brain. Furthermore, in 1990, neuroscientist and philosopher Francisco Varela introduced the concept of neurophenomenology, which considers subjective phenomenal experiences shaped by aspects of intentionality, self, point of view, and sense of self as real, therefore suggesting that phenomenology may not be reduced to mere neural activity in the brain. Varela also addressed the concept of embodiment in which the brain's sensorimotor functions are directly related to the body, and the latter's connection with the environment is viewed as a constitutive factor for consciousness.

In this thesis, having considered the three forms as described, I started from a reductive vision proposed by Churchland Patricia Smith and Metzinger&Gamma – which American philosopher John Bickle refers to as 'the philosophy of neuroscience' – and arrived at a non-reductive, bidirectional vision of neurophilosophy as advanced by Klar.

In conclusion, oscillating between concepts from sciences and orientations that seem to be different or are accepted as different, or have acquired new valences over time – due to the delimitations of language, jargon and methodology specific to each – requires for us to transgress

such limits and to venture into what appears as uncharted territory in order to achieve an ideal also upheld by Husserl – that of establishing a universal science that would include all sciences, through unification.

Phenomenology's contribution to empirical sciences may indeed provide a needed theoretical framework for avoiding critical errors, whereas the contribution of empirical sciences – in our case, especially of neuroscience to phenomenology – can provide the level of evidence necessary to an otherwise purely theoretical framework. We believe that in our case, some of the most constraining limits can be attributed to language and epistemological framework but also, ultimately, to attitude and interest – given that both empirical and phenomenological research is concerned with common interests such as consciousness, the problem of the self and its ontological status (existence and reality), free will, the sensation of passage of time, etc. However, neuroimaging has begun to focus its investigations into such issues in the last 35 to 40 years only, and the technology for such brain scanning tools was not developed in Husserl's time to the level it is today – therefore, we cannot know for sure how Husserl would have perceived this juxtaposition.

Transcendental phenomenology comes in to fill the gaps that positive sciences such as psychology fail to cover with regard to our psychic inner life, and together with the phenomenology of religion can also give a better understanding of neuroimaging results as far as intra-psychic phenomena such as experiences of spiritual meditation and mystical-religious experiences are concerned. Incidentally, one of Husserl's contemporaries who noticed similarities between reduction and Buddhist philosophy was his close assistant Eugen Fink, as revealed by one of Husserl's students, Dorion Cairns, in his book *Conversations with Husserl and Fink*. Looking in both directions, from the perspective of apparently opposite fields, i.e. from neuroscience toward philosophy and from philosophy toward neuroscience, we may arrive at a deeper understanding and a broadening of the scope of knowledge needed for future research in both fields. This is also the aim of the present paper.

From a neuroscientific viewpoint, having a religious experience may simply be defined or treated as lacking any philosophical or religious connotations, e.g. a mere coloring or activation of a portion of the brain. From this it follows that we need a clear understanding of the phenomenon in the transcendental plane before we accept and theorize what objective science reveals to us through its measuring instruments.

I believe that this work can be of equal interest to philosophers of religion, phenomenologists, indologists, neuroscientists, cognitivists, psychologists and – last but not least – practitioners of various forms of religious manifestation, providing a new working framework even to those unfamiliar with the fields or the terms used.

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