The Arcane Nexus

Assessing the Roots of Non-Local Consciousness

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Contents

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1 Introduction

The world we live in consists of a plethora of things that range from natural forces such as gravity and electricity to objects such as subatomic particles, stars, rocks, water, plants, fungi, animals and self-conscious organisms: Human beings. If we want to understand the nature of this world including human beings, there is no way to avoid assessing the nature of their conscious minds as well. After all, everything that humans can know about this world can only be known through our mind. It is the lens that mediates all perceptions, thoughts, feelings, and communication. We are therefore in the very difficult position of having to strive toward the best possible understanding of the very element that enables understanding in the first place.

As if that were not enough of a challenge, the descriptions of the nature of human consciousness provided in typical literature on neuroscience and philosophy are usually incomplete. In particular, they frequently do not take into account empirical phenomena that challenge the "mainstream" notion of life and the traditional order of the flow of events: Psi phenomena. These phenomena fall into four main categories: *telepathy* (the sharing of knowledge or feelings between two or more individuals without using the biological sensory channels), *clairvoyance* (direct cognition of information or events without using the biological sensory channels), *precognition* and *retrocognition* (direct cognition of future or past events), and *psychokinesis* (the affecting of matter without the use of physical action).

All of these comprise what has been called "non-local consciousness" (NLC) in the context of the second Linda O'Bryant Essay Competition of the Institute of Noetic Sciences. Here, "non-local" consciousness means "a form of consciousness that is not exclusively generated by neuronal activity and that extends beyond the brain and body." This implies "that (a) consciousness is not constrained by the brain, the everyday boundaries of space and time, or by the traditional five senses, and/or that (b) consciousness, via focused attention and intention, can potentially influence aspects of the physical world at a distance" (IONS, 2024).

This characterization of NLC applies to psi phenomena as well. Hence, I use the terms "NLC phenomena" and "psi phenomena" interchangeably in this essay.

Unfortunately, NLC and its ways of manifesting have been largely neglected by most scientists and are not permitted a role in contemporary mainstream physics, biology, psychology, or philosophy. But the reality of NLC phenomena can no longer be doubted. Hence, I write this essay on the premise that their facticity is well established (see Chapter Two for some evidence). They occur in *homo sapiens* and in non-human animals.

In short: In order to understand the world and human beings in the fullest possible manner, we must strive to understand consciousness. And in order to understand consciousness, we must strive to understand its non-local aspects. Any attempt to understand the nature of this world or to explain it in scientific terms is doomed to fail if it does not take NLC into account.

Therefore, the topic of the second Linda O'Bryant Essay Competition of the Institute of Noetic Sciences, namely to provide a review and comparative analysis of existing theories of NLC, is of great importance and topicality.

In my contribution, I review and compare various models of NLC ranging from concepts held by Indigenous peoples, esoteric Eastern traditions, philosophers writing on animal magnetism, somnambulism, and spiritualism, to a large spectrum of more recent theories.[1] I highlight their strengths and weaknesses, examine how well they are suited for an overarching synthetic approach, and suggest possible ways to refine and advance the state of current theorizing about NLC.

[1] The concept of *animal magnetism* originated from Franz Anton Mesmer's (1743–1815) healing practices. He maintained that all living beings possess a force or fluid which he called "animal magnetism", and developed methods to cure patients by manipulating it. Later practitioners often put their patients in trance, inducing a state called *somnambulism*. Several NLC phenomena have been reported to occur when people are in this state (e.g., Kerner, 1845). From the 1850s onward, numerous so-called "mediums" claimed they were able to contact the dead in similar trance states, mediating communication with the living. These sittings with mediums lead to the development of the movement of *spiritualism*.

In line with the requirements of this essay competition, a few preliminary definitions are apt.

Throughout the following, I treat the terms "consciousness" and "mind" largely interchangeably. When I use them in reference to the conscious human mind, I typically mean first-person subjective awareness. However, I also use the terms "consciousness" and "mind" in a more general sense, namely as a natural phenomenon that may constitute an intrinsic feature of the world. In this context, these terms do not imply first-person subjective awareness but rather refer to a subconscious or unconscious mental facet of the world that individual human beings have no first-person subjective access to. It is important to note also that the operations of the human mind do not consist exclusively of first-person subjective awareness, but rely to a considerable degree on unconscious mental processes as well.

I presuppose not only that consciousness is non-local as defined above, but also that NLC is not constrained by the familiar boundaries of space and time, or by the biological senses. This is why some NLC phenomena—telepathy, clairvoyance, precognition, and retrocognition—are often called "extrasensory perception" (ESP). Similarly, I presuppose that human consciousness, via focused attention and/or intention, can in principle influence aspects of the physical world at a distance in a direct manner (psychokinesis).

In a previous paper in which I assessed a number of theories of psi that imply NLC, I argued that several aspects of different theories share the potential to be integrated into what I called the "parapsychological synthesis" (Nahm, 2022b). In the present treatise, I expand on this approach and elaborate on it, providing more detail.

2 The Empirical Evidence at Issue

Before beginning the review of theories of NLC, it is worthwhile to highlight what empirical evidence for NLC need to be explained by them. The best empirical evidence for NLC is provided by the psi phenomena, extrasensory perception (telepathy, clairvoyance, precognition and retrocognition) and psychokinesis. Hence, theories of NLC must be able to account for these phenomena. There is an enormous amount of data on psi phenomena obtained in controlled laboratory experiments (Cardeña, 2018). This kind of investigation was conducted chiefly from the early 20th century onward. But there is likewise an enormous amount of data on psi or NLC phenomena that was obtained in studies on spontaneous and induced psi phenomena in real-life environments. In the following, I will broach survival phenomena, macro-PK, and shared dreams.

Survival phenomena

Among these NLC phenomena, survival phenomena rank among the most striking. In a previous award-winning essay (Nahm, 2023a), I argued that the most important survival phenomena are after-death contacts (ADCs) including near-death visions (NDVs), near-death experiences (NDEs) out-of-body experiences (OBEs), specific cases of mental mediumship, and cases of the reincarnation type (CORT) including cases of replacement reincarnation (also called "cases of the possession type").

All of these survival phenomena do occur. Although some cases may be attributed to misperception, misinterpretation, misremembering or fraud, it is reasonable to assume that a vast majority of cases are authentic in the sense that they have been described by witnesses and researchers with satisfactory closeness to the events as they really happened. Concerning CORT, the survival phenomena I consider to be most important and compelling, I listed 30 individual cases in the aforementioned

essay that anyone interested in developing an informed opinion on CORT may study as an introduction.

Many scientists favor evidence for NLC obtained in controlled laboratory settings over evidence obtained in single case studies of spontaneous real-life occurrences. Nevertheless, along with numerous other authors, I consider the latter evidence for NLC to be generally more important, in particular in the present context of reviewing theories of NLC. I concur with psychiatrist Ian Stevenson (1971), who initiated systematic field studies of CORT, that spontaneous cases provide some of the best evidence we have for NLC phenomena. They often provide much richer information than the outcomes of laboratory experiments. Moreover, the value of a theory for NLC is best assessed when it is tested against the strongest and most complex phenomena with the highest possible validity. Hence, in my review and analysis of theories of NLC, I will pay particular attention to the question of how well they can account for spontaneous survival-related phenomena, especially NDEs and CORT.

Macro-PK

Moreover, I consider psychokinesis (PK) to be an established fact – both micro-PK (direct mental influence on objects or processes on a microscopic level, such as the outputs of random event generators) and macro-PK (direct mental influence on objects visible to the human eye). I provide a few introductory sources on macro-PK below. Specific instances of macro-PK I consider to be authentic include psychokinesis and the levitation of matter in the context of poltergeist cases (e.g., Gauld & Cornell, 2017), physical mediumship (Braude, 1997; Gimeno & Burgo, 2017; Randall, 2001), and mysticism (Eire, 2023; Grosso, 2016; Thurston, 2013), as well as the seemingly inexplicable appearance and disappearance of objects (apports and deports) in the context of poltergeist cases, in sittings with mediums (for further references see von Ludwiger & Nahm, 2016), but also in everyday life (Barrington, 2018; Jinks, 2016). And although it is regarded as highly controversial

even among those who are open to macro-PK, I furthermore consider the anomalous behavior of metallic objects in response to human efforts, so-called metal bending, to be an established facet of macro-PK (Hasted, 1981, Berendt, 1986; Randall & Davis, 1982; for a remarkable example see also Radin, 2013, p. 219). Another well-documented example of macro-PK is Jule Eisenbud's (2021) investigation of the "thought images" created by Ted Serios. Hence, my review of theories of NLC also addresses the question of how well they can account for macro-PK phenomena.

Shared dreams

Similarly, my review addresses how well the theories can account for shared or mutual dreams. In ideal examples of these dreams, two or more people share a dream in a mutually-congruent intersubjective dreamspace. Here is a summary of an example that presents many congruencies in the simultaneous dreams of three different persons:

> One night at around 12 o'clock, Mr. Brown dreamt he was lying on his back on a street. He was in the grip of a thick-set man with unkempt hair who tried to murder him with a bright hatchet. Fighting for his life, Mr. Brown was relieved to see some friends of his come running to him in order to help, but it was too late. He saw the hatched flash above his head and felt a dull blow that seemed to kill him. The next morning, Mr. Brown met a friend who was among those who came running for help in his dream. Without being prompted, this friend reported having had a strange dream around 12 o'clock the night before: He heard noises and cries of murder, so he hurried to the source of these noises together with other people. He saw Mr. Brown lying on his back on the street, fighting a thick-set man with uncombed hair who tried to kill him with a hatchet. But it was too late: Just when he reached the scene, the man struck Mr. Brown's head with the hatched and killed him instantly. A week later, Mr. Brown visited another friend who was among those who came

> running for help. At the time in question, also he had a dream in which he ran to help Mr. Brown who was fighting a man who tried to kill him with a hatchet, but came too late. These friends of Mr. Brown were unknown to each other and lived in different towns. The first one dreamt that he was the foremost who reached the scene, the other that he was among those who followed. Both points coincided with Mr. Brown's dream. (Hart & Hart, 1933)

In this example, all three men apparently shared virtually the same dream. Often, however, shared dreams differ in details. Unfortunately, shared dreams and their phenomenology have been grossly under-researched until now, although reports about them are frequent and stem from a wide variety of sources. They can be seen as fully-fledged and extreme cases of telepathy, a logical extension of more commonly-known instances of telepathy or of telepathic influence on others' dreams (Sherwood & Roe, 2013). As Hornell Hart, a researcher with a particular interest in shared dreams, once put it: "Granted the reality of telepathy, the occurrence of shared dreams is to be expected" (Hart, 1965, p. 17).

As I will show later in this essay, shared dreams bear vital significance for theories of NLC. Since they are little known, I provide some more information on them below to familiarize the reader with this topic.

To begin with, shared dreams are reported by a variety of Indigenous peoples; prominent examples are Australian Aboriginal traditions (Munn, 1986; Poirier, 2003). Usually, participants in Aboriginal shared dreams know each other and have a special relationship such as living in the same village or belonging to the same clan. In some tribes, the spiritual leaders even perform rituals for a group of people who then venture on a joint dream journey under the leader's guidance (Tonkinson, 2003). The practice of shared dreaming often implies enhanced awareness compared to ordinary dreaming. The dreamers know they are experiencing a

dream. Today, dreams in which the dreamer is conscious of being in a dream are known as lucid dreams.

From Nepal, Diana Riboli (2014) reported that shamans met in the spirit realm via lucid dreams to interact with each other, usually to fight with each other or to teach their disciples. She even reported a lucid dream of her own into which one of her interviewed shamans entered on purpose. Similarly, Marianne George (1993) reported that shared dreams were common in the family of a "big woman" she studied in New Guinea. She gave three examples of her own (non-lucid) dreams which up to three family members seemed to share. Unlike her, though, they had apparently been fully aware that they were sharing these dreams with her.

Interactions between shamans in a shared dreamspace are also reported from other peoples such as the Siberian Tungus (Sumegi, 2008). In North America, spiritual leaders of the Dane-zaa known as "Dreamers" refined their ability to contact others through their dreams into an art. As reported by Robert Ridington (2014), dreamers who are hundreds of miles apart can communicate with one another while being consciously aware of being in a dream.

However, shared dreams and shared lucid dreams are by no means only reported from Indigenous traditions. They are likewise reported from mystical traditions, particularly Tibetan Buddhism, Hinduism, Chinese esoteric traditions, and Sufism. In the West, German philosopher Carl du Prel (1839–1899) wrote about shared dreams. He called them "double dreams" and gave several examples (du Prel, 1891). They seem to occur particularly among people who are closely and emotionally related. Physician and psychoanalyst Wilhelm Stekel (1918) reported a particularly remarkable example: A young man sought his aid to *stop* the constant shared dreams he experienced with his fiancée. These dreams began to seriously strain their relationship since they often concerned sexual affairs with others that resulted in disputes and jealousy.

Numerous more recent examples can be found in other sources (e.g., Donahoe, 1979, Hart & Hart, 1933; Magallòn, 1997; McNamara et al., 2017). Not surprisingly, perhaps, shared dreams are also reported from identical twins who are very close to each other (Brusewitz et al., 2013; Playfair, 2012). Moreover, shared dreams tie in neatly with other shared psi experiences that have been reported and chiefly involve emotionally-close individuals, such as collective or reciprocal apparitions and out-of-body experiences, or shared NDEs and deathbed visions (Nahm, 2011; Shared Crossing Research Initiative, 2021. For further references, see Nahm 2019b).

These reports about shared dreams, shared lucid dreams, and other shared experiences in non-physical realms indicate that NLC is not only a feature of the "ordinary" world we live in. Rather, if we frame shared dreams as extreme instances of telepathy, it is apparently possible to share an intersubjective domain that is different from and not located in our physical environment. Still, in well-developed instances, the participants of shared dreams perceive and act in an environment that is apparently comprised of space and time. Moreover, as in the example of Mr. Brown, streets, a hatchet and other "physical" objects in this dreamspace typically appear to be solid and material as well. Even the familiar modes of causation can be functional in dreams for prolonged periods of time: one billiard ball can hit and move another, and a blow on the head with a hatchet can kill a person. There are even cases in which dream contents of sleeping persons match impressions or "hallucinations" in the environment of people who are awake, thus suggesting that the nature of our dreamspace and of our familiar world are not too different to be blended (Hart & Hart, 1933).

We might thus be inclined to ask: to what degree can we be sure that space, time and causation in our familiar earthly environment are objectively real, then? Do they really exist independently from us? In fact, many have already emphasized that you cannot even prove to others (or yourself!) that you are not dreaming *right now*

as you read these lines. Hence, shared dreams lend support to the arguments of numerous philosophers, but also the notions of many Indigenous and mystical traditions, that our familiar physical world possesses dream-like features as well. In mystical experiences, we might even be able to "wake up" from this dream of everyday life. The seemingly-inert stuff constituting the world of wakefulness might not be entirely dissimilar from the stuff constituting the dreamspace. Because of these important implications of shared dreams for theory building, I will consider them in my review and analysis of theories of NLC and the philosophical frameworks in which they are embedded.

Summing up: The most important evidence for NLC that NLC theories must be able to explain are:

- CORT (including cases of replacement reincarnation)
- Near-death experiences including OBEs
- Shared dreams
- Macro-PK

3 Setting the Stage: The Game of Isms

When we strive to obtain a deeper understanding of phenomena that are notoriously difficult to grasp, such as human consciousness and seemingly elusive phenomena such as NLC phenomena, a basic understanding at least of some philosophical concepts is indispensable. Science and scientific theorizing have many facets that depend on their context, and scientific rationales that work well for classical physics, for example, might not work elsewhere.

In philosophical contexts, including discussions about consciousness and NLC phenomena, different "isms" are used to place theories or models into specific frames of thought within the philosophy of nature. Prominent isms include idealism, physicalism, materialism, monism, dualism, dual-aspect monism, reductionism, holism, and panpsychism. However, depending on the exact context, there are different interpretations of these isms and, furthermore, different authors may have different understandings regarding their meaning. This can result in ambiguities (Marshall, 2021).

In order to resolve some of these ambiguities and enable a clearer characterization of some philosophical concepts, I will introduce two new terms and concepts into the discussion, namely *hybrid monism* and *relative dualism*. To explain the meanings of these and other isms and how I use them in the subsequent parts of this treatise, I will provide an overview on important basic concepts. In the following, I therefore present a brief crash course of isms that frequently arise in theorizing about NLC.

The ontic and epistemic domains of existence

A very important basic distinction that is vital for assigning isms their proper context concerns the distinction between the epistemic and the ontic domains of existence. A great many philosophers of all times and holding a wide variety of viewpoints are in general agreement that the environment we perceive with our biological senses, the "world" we construct with the help of sensory perceptions

and our rationality, is not equivalent to the fundamental reality of everything that exists. The phenomena we perceive in our environment are rather considered to be an excerpt and representation of a more complex layer of reality that is comprised of numerous features inaccessible to our senses and sense-enhancing devices, and very likely also to our logically-operating rational mind. The mind obviously has difficulties understanding some of the odd features of quantum physics and the theories of relativity, so it is reasonable to assume that there are other phenomena in nature that also challenge human logic.

This distinction between the familiar world and a more fundamental and largely inaccessible realm is very old. It might even have been fostered by dreams and exceptional experiences at the dawn of human evolution, especially when these experiences implied perceived or imagined aspects of NLC. Indigenous and spiritual traditions all around the globe conceived this background realm of existence as the foundation of the everyday environment. It was also thought to be populated with mythical and spiritual entities such as deceased ancestors, gods, demons, and animal spirits. In prominent Hindu philosophies, the familiar world we perceive is considered to be "maya", an illusory and fleeting construct that hinders the access to glimpses into "brahman" – the eternal truth behind the veil of maya, the pervasive source of all changing phenomena, which does not itself change.

One of the founders of Western philosophy, Plato (c. 427–348 BC) formulated a similar notion with his famous cave analogy: We are like people who live in a cave and can only perceive shadows moving on the cave's walls. Because we know nothing else, we take these shadows for reality. But reality is much more complex, comprised of a colorful world and the sun outside. And were we to be led outside the cave to see this larger reality, we would not be able to comprehend it, at least, at first. With this analogy, Plato illustrated the gist of his concept of Platonic Forms. In his philosophy, they constitute the realm of true reality that is inaccessible to us.

The phenomena of our earthly existence are mere lower-level, fleeting, and incomplete representations of these Forms.

Much later, in 1781, one of the most influential philosophers of recent centuries, Immanuel Kant (1724–1804), came to similar conclusions in his seminal book, *Critique of Pure Reason*. He regarded the world as being composed of phenomena that we virtually create ourselves, whereas the "noumena", or "things in themselves", from which the phenomena are derived, remain fundamentally inaccessible for our modes of perception and the functional modes of the rational mind. All we can perceive are representations of things in themselves. Kant remained ambiguous regarding the nature of things in themselves, and also changed his mind over time. Numerous later philosophers, however, considered the things in themselves to be factually existent and argued that there are even some features of them we can infer or gain knowledge about.

One of these philosophers was Arthur Schopenhauer (1788–1860). He was a very important pioneer of theories of NLC and I will return to his thought in detail later.

Schopenhauer admired Plato and Kant but aimed at developing their basic ideas further. For instance, he disagreed with Kant that we cannot know anything about a thing in itself. Rather, he identified the thing in itself with a fundamental will to live by likening it to our own individual will to live. In this view, all phenomena in the world that we live in, including our own body and mind, are representations of this fundamental will to exist and to live – hence the title of his main work, first published in 1819, *The World as Will and Representation* (for an accessible introduction to Schopenhauer's philosophy, see Kastrup, 2020).

According to Schopenhauer, this primordial will at the heart of existence is spiritual in nature.[2] And, because everything we perceive is merely a representation of this

[2] For Schopenhauer, the spiritual nature of our own will and the will at large was so self-evident that he barely highlighted it explicitly. I am currently aware of only one text passage where he explicitly characterized the primordial will as spiritual (Schopenhauer, 1889, p. 237).

will and is rooted in it, direct access to this fundamental level of existence would allow for phenomena of NLC. Schopenhauer eagerly studied the scientific literature of his time, including treatises on somnambulism, animal magnetism, and the phenomena we call psi phenomena today. He was convinced that the facticity of these phenomena had already been established beyond doubt, stressing that "whoever at the present time doubts the facts of animal magnetism and its clairvoyance" should not be called a skeptic but an ignorant (Schopenhauer, 2000, p. 229). These phenomena were of utmost importance for Schopenhauer, as he felt they would positively prove the existence of the mental background realm of existence, the realm of the will, since NLC phenomena could not be possible in a mechanistic and materialistic world in which only the familiar modes of physicochemical causes and effects existed.

In more recent philosophical terminology, the two realms of the cognizable world and the underlying but usually inaccessible background reality can respectively be called the *epistemic* domain and the *ontic* domain of existence (Fig. 1). The term "epistemic" is derived from the Greek word "episteme" (knowledge). Accordingly, epistemology is the philosophical branch of study concerned with the origin, nature, and scope of knowledge about the world we observe. The term "ontic" is derived from the Greek word-forming element "onto-". It means "being" or "existing." Accordingly, ontology is the philosophical branch of study concerned with the nature and properties of the most fundamental level of existence.

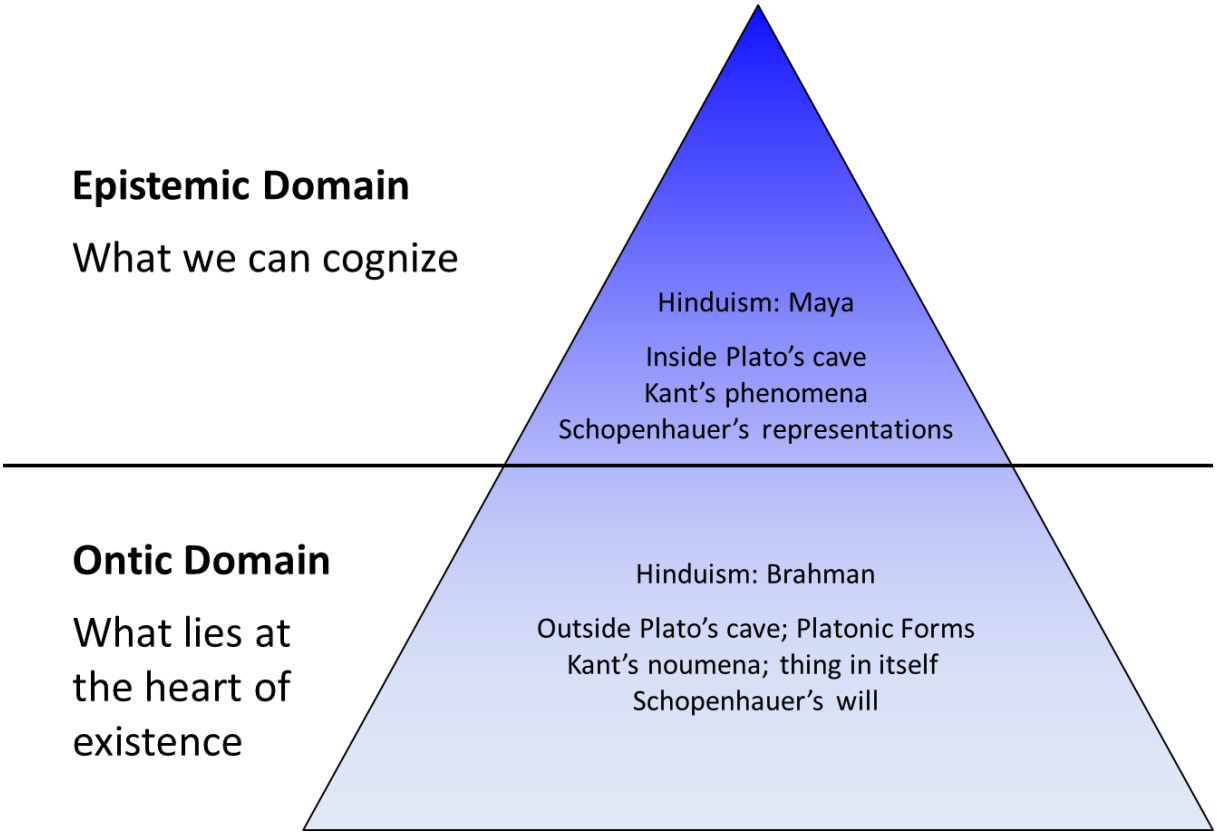

Fig. 1. Illustration of the epistemic and the ontic domains of existence.

However, the border that separates the epistemic domain from the ontic domain is neither distinct nor static. The more we know about the world, the more encompassing the epistemic domain becomes.

This likewise applies to biological evolution. As argued by Carl du Prel, the epistemic domain of oysters and earthworms is clearly more limited than that of human beings. The more we learn about the epistemic domain in the course of scientific discovery, the better equipped we are to speculate about potential properties of the ontic domain.

As an analogy to this process drawn from psychology, one could say that we can gain increased knowledge about the dynamics of the unconscious by studying it consciously.

The ontic properties of mind and matter

The next important distinction leads straight into the heart of the discussions concerning NLC and isms of natural philosophy, and in fact, to one of the most important questions of philosophy: What is the relationship between mind and matter?

Kant insisted that the epistemic domain comprises "outer" or objective phenomena, such as our body and other objects we perceive in our surroundings, and "inner" or subjective mental phenomena we can perceive, experience, or be aware of via an inner sense, such as feelings, wishes, and thoughts. But what is the relation between these objective and subjective phenomena? In traditions of natural philosophy, the basic frames of thought used to characterize the fundamental nature of mind and matter are *substance monism* and *substance dualism*. In this philosophical context, the term "substance" does not refer to a material of whatever kind as in colloquial language, but – speaking roughly – to any "thing" that is fundamental, has a property, and might be able to exist, even if it is purely mental.

According to substance dualists, mind and matter are two fundamentally different substances all the way down into the ontic domain (Fig. 2). On the epistemic level, mind and brain are still considered to be of substantially different nature. Hence, mind and brain processes must either run in parallel according to specific laws that might have been installed, for example, by God, as in the philosophy of Gottfried Wilhelm Leibniz (1646–1716), or they must interact with each other.

A famous exponent of the latter view is the eminent French philosopher and mathematician René Descartes (1596–1650), hence the frequently-used term "Cartesian Dualism" for this type of interactionist substance dualism. One reason why Descartes arrived at this dualist notion is that he realized that there is only very, very little in nature that we can really be sure about. We cannot know if the objects we perceive are real – or in fact, if anything is objectively existent outside

our own mind. We cannot even distinguish between a dream and "reality"; we cannot know if we are experiencing a subjective dream right now or not. Descartes maintained that the *only* thing we can be sure about, and cannot doubt, is that we can doubt everything we experience by using our rational mind. Hence his famous dictum "*Cogito, ergo sum*" – "I think, therefore I am."

Consequently, Descartes distinguished between an entity that is purely mental, namely the "*res cogitans*" or "thinking substance", from matter, the "*res extensa*", the "extended substance." Because mind and brain therefore belong to fundamentally different substances, they can also be decoupled from each other under certain circumstances – for example, after death. In substance dualism, mind can in principle exist on its own. Therefore, NLC phenomena including CORT, NDEs, shared dreams, and macro-PK are possible in substance dualism.

By contrast, proponents of substance monism argue that there is only one substance at the heart of existence, not two (or more, as in *substance pluralism* – a philosophical concept that is currently uncommon and so will not be considered further). Substance monism can be divided further with respect to the nature or quality of this fundamental substance. Its most prominent traditional forms are *materialism* and *idealism* (Fig. 2). Although there are different forms of materialism, its proponents typically maintain that in one way or another, everything that exists is matter in the sense of something physical.

More recently, the term materialism has been replaced more and more by the term *physicalism*. One reason for this replacement is that matter as we perceive it on the epistemic level has been increasingly recognized to be a mere construct created by our modes of perception and functioning. What we perceive as solid matter is in effect formed of subatomic processes that do not consist of solid matter at all. Nevertheless, these processes are still considered to be purely physical, hence the more appropriate term physicalism.

In this view, consciousness including the human mind is usually conceived as a (by)product of physicochemical processes in the brain. In other words, consciousness is exclusively caused by brain activity in a one-way relation; it is an "epiphenomenon" of the brain. Hence the name *epiphenomenalism* for this notion of consciousness. In drastic forms of physicalism, consciousness is regarded as a mere illusion (*illusionism*).

Clearly, NLC phenomena such as CORT and shared dreams are impossible in a physicalist model. Some parapsychologists have nevertheless advanced physicalist models for other NLC phenomena, but these models are still loaded with grave difficulties, for instance when it comes to explaining macro-PK. Because of their limitations regarding CORT and macro-PK, physicalist models can at best only contribute partially to theories of NLC.

Idealism represents virtually the opposite view of physicalism (Fig. 2). Its proponents argue that everything that exists, including what we perceive as matter, rests on a mind-like foundation. Schopenhauer's philosophy and his postulate of the spiritual will to live as foundation of existence is a notable example of this view. It is often called *objective idealism* because this mind-like foundation is thought to exist objectively and independently of our individual conscious mind. *Subjective idealism* is a related philosophical position according to which the world we perceive is a construct created by our subjective mind.[3] Schopenhauer held this view as well. Therefore, he serves as a prime example of a simultaneous objective *and* subjective idealist. Kant, however, maintained that we cannot know the true nature of things in themselves, and accordingly remained agnostic regarding the ontic domain. He can therefore be regarded as a subjective idealist but not an objective idealist. Since subjective idealism alone does not contain statements about the ontic domain, I will not consider it further in this essay.

[3] The first distinction between objective and subjective idealism can be traced to German idealist philosopher Friedrich W. J. Schelling (1775–1854). When distinguishing his idealist position from that of his idealist contemporary Johann G. Fichte (1762–1814), Schelling (1801) stated that he pursued an objective approach, whereas Fichte chose a subjective approach.

In objective idealism, mind is the foundation of all existence. Therefore, NLC phenomena are in principle possible in models based on it.

However, physicalism and objective idealism only represent the extremes or two outward poles of substance monism. Just as we can presume that the unitary substance at the heart of existence is purely physical or purely mental, we can also presume that it is a mixture of both, or that it cannot be adequately described in these terms at all. A philosophical concept that has become increasingly discussed in recent decades is neutral substance monism, or in short, *neutral monism* (Fig. 2). As usual, this concept also has different versions. Its most important criterion is that the substance constituting the ontic domain is conceived to be neither mental nor physical, or to be both mental and physical. Hence, this primordial substance is typically regarded as neutral with regard to these two qualities. This ontic neutral substance nonetheless gives rise to what we perceive as mind and matter in the epistemic domain.

At first, it might seem odd to think that a mental activity such as reading this essay shares a common root with the material of the chair you are sitting on. But again, intellectual activities and solid matter only comprise the extreme poles of matter and mind on the epistemic level. In essence, a solid chair does not even exist. It is composed of subatomic particles that are bound together by mysterious "natural forces" forming atoms. If one could magnify an atom to the size of a football stadium, the nucleus of the atom would be the size of a pea in the center of the stadium, and the electrons would be circling around the nucleus at the outer stands with virtually nothing in between. In fact, subatomic particles are not even material particles. They have a wave nature as well as their particular nature, and electrons do not really circle around the atomic nuclei but form mere "probability clouds" that indicate where an electron might be found if measured. The solid chair you sit on is only your own construct in the epistemic domain.

Thus, the true nature of matter on the ontic level remains entirely obscure. Already on the deepest epistemic level currently accessible to us, it might be nothing more

than structuring waves or interacting fields of energy that operate in clouds of probability. Seen in this light, such fundamental "material" or "physical" processes might even possess proto-mental aspects because one of the key features of human consciousness likewise consists in bringing structure to experience and mental content. Hence, matter and mind could theoretically share such a neutral substrate as a common root.

The term "neutral" as in neutral monism implies a kind of 50:50 symmetry or balance between the physical and the mental; but, of course, this does not have to be the case. We do not know if such a symmetry exists in nature. It could just as well be the case that this ontic substance has predominantly a physical quality and only a tiny share of mental quality, or vice versa. Hence, I use the term *hybrid monism* for all varieties of substance monism that are not purely physicalist or idealist. Neutral monism is only one possible form of hybrid monism, namely the most balanced version (Fig. 2).

However, as argued also by Paul Marshall (2021), neutral monism is in fact a somewhat misleading concept, because the mental and the physical are not on par. Numerous philosophers have emphasized that all we can know for sure is that we are aware of ourselves; this was the starting point of the philosophies of Kant, Schopenhauer, and many others. Even renowned physicists such as Max Planck (1858–1947) stressed that "we cannot go behind consciousness" (Sullivan, 1931): All kinds of perceived matter must be processed by consciousness first. Therefore, mind and matter are not equal on the epistemic level.

In fact, we perceive and experience matter every night in our dreams – we create it virtually! As mentioned already, dreams are so similar to waking life that you cannot prove you are not dreaming right now. Still, I doubt that any neutral monist or physicalist would claim that this "dream matter" is the same as matter in waking life, even in shared dreams. Hence, there is an obvious imbalance between mind and matter. We can easily demonstrate how consciousness "creates" matter, but we cannot demonstrate in similarly easy terms how matter "creates" consciousness.

Consequently, some supposedly classic "neutral" monist approaches are in fact not neutral at all but idealism-slanted (Marshall, 2021).

Moreover, as also pointed out by Marshall (2021), very deep mystical experiences in which "formless" or pure consciousness is experienced typically make no reference to matter-related properties of the primordial foundation of existence. Accounts of these experiences favor objective idealism or idealism-slanted monisms over neutral monism as well.[4]

In any case, because the mental is not excluded in all forms of hybrid monism, they provide, in principle, suitable philosophical frames for NLC phenomena including NDEs, CORT, shared dreams, and macro-PK.

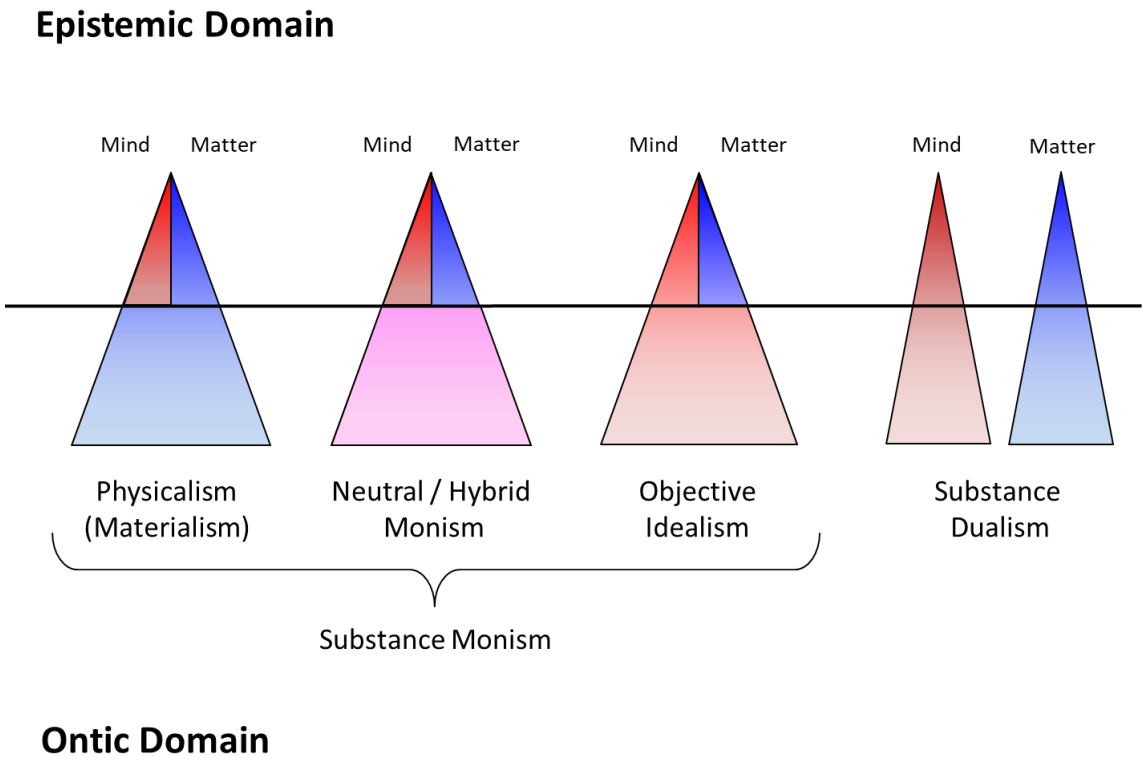

Fig. 2. Important philosophical positions concerning the roots of mind and matter in the ontic domain.

[4] In fact, the question what counts as idealism or neutral monism might merely hinge on the question of how consciousness is defined, namely, whether one attributes structuring properties to it or not. If one does attribute structuring properties to consciousness, the view is objective idealism; if one does not attribute structuring properties to consciousness but rather regards them as aspects of matter, the view is hybrid monism or even neutral monism.

The epistemic dimension of mind and matter

As mentioned, neutral or hybrid monism comes in different varieties. Some varieties address the problem of the relationship between mind and matter. Even if we assume that both arise from a common and shared unitary ontic substrate, it remains an open question what the precise relationship is, say, between the mind and the brain in the epistemic domain. With such a focus on the epistemic domain, two kinds of neutral monism have been discussed most frequently in philosophical discourses, and also in NLC discourses. The first is called *dual-aspect monism,* and I call the second *relative dualism*.

The gist of dual-aspect monism is: Whatever we perceive as mind and matter on the epistemic level is a representation of a unitary entity on the ontic level. Only our modes of perception and reasoning split this unitary entity into something with two seemingly different aspects that appear as mind and matter to us (Fig. 3). Traditional versions of dual-aspect monism therefore have a significant corollary: Processes of the mind and the brain must always run in parallel because they represent two views on the same entity. This is why Gustav Theodor Fechner (1801–1887), an early and influential proponent of dual-aspect thinking, called it the "identity view" in his writings (Heidelberger, 2004). In this view, processes of mind and brain imply *psychophysical parallelism*. Fechner illustrated this point using the image of a curved line: Just as a curved line is convex viewed from one side, it is concave when viewed from the other. But it is only one and the same curved line (Fechner, 1851). Obviously, one cannot change one of these sides without automatically changing the other. When you bend a coin or a page of a book, both sides will always bend in unison. Similarly, what appears as material brain activity to us from one perspective appears as mental activity to us from the other perspective, and both must by necessity always run in parallel.

Hence, in contrast to interactionist substance dualism, there is no causal interaction between mind and matter in dual-aspect monism. Likewise, mind and matter do not run in parallel because specific laws or godly influences govern this parallelism,

but automatically run in parallel simply because our modes of cognition construct two corresponding and correlating facets of a singular entity. This identity view or psychophysical parallelism was widespread among natural scientists and philosophers in the second half of the 19th century. The term "dual-aspect monism" for this position became fashionable only later (Heidelberger, 2000).

However, it is crucial to understand that, regarding the mind/brain problem, the logical and conceptual gist of dual-aspect monism only consists of the tenet that what we perceive as mind and brain pertains to a singular entity. The attribute "dual-aspect" clearly refers to the epistemic level. It says nothing about the nature of the ontic domain. Hence, although dual-aspect monism has sometimes been portrayed in a manner as if it would automatically imply neutral monism (e.g., Atmanspacher, 2024a), one can naturally apply it to the physicalist, hybrid, and idealist kinds of monism as well.

Fechner himself serves as a prime example for illustrating this point. Although it has been claimed that Fechner made no ontological commitment (Atmanspacher & Rickles, 2022), he first seemed to lean towards a materialist position and later aligned himself explicitly with objective idealism while maintaining his identity view of the mind and brain (Fechner, 1879; Heidelberger, 2004). He thus adopted a dual-aspect position previously held by objective idealist philosopher Friedrich W.H. Schelling (1775–1854). Similarly, Arthur Schopenhauer has been portrayed as a pioneer of dual-aspect thinking and a neutral monist (Atmanspacher & Rickles, 2022). But, as highlighted already, Schopenhauer was an outspoken objective idealist as well.

NLC phenomena are possible in principle in dual-aspect monism, but it faces difficulties when it comes to accounting for postmortem survival of human consciousness, as in CORT. This is only logical: If the personal human mind is only an epistemic construct that parallels epistemic brain physiological processes, personal features of the mind can no longer exist once the brain is inactive and decomposed. Seen from the identity view, one side of a coin cannot survive on its

own when the other disintegrates. They come and go together. Consequently, numerous dual-aspect monists, be they physicalist, neutral, or idealist monists regarding the ontic domain, were highly skeptical of the possibility of personal survival.

The last concept within natural philosophy concerning the relationship between mind and brain I will introduce has no specific and widely accepted name. But because many authors of recent centuries argued along its lines already, often without even noticing that they were advocating a position that is not covered by existing isms, it clearly deserves an own name. I call it *relative dualism*.

The main distinction of relative dualism from traditional dual-aspect monism is this: Although it is a monist concept regarding the ontic domain, it breaks with the identity view and the postulate that processes of mind and brain must always run in parallel. In contrast to dual-aspect monism, relative dualism does not require mind and brain to adhere to psychophysical parallelism. Processes or states of mind and brain can be decoupled from each other; they can exist without automatically implying a corresponding correlate of the other aspect. This obviously goes beyond treating mind and brain as mere cognitive constructs that show two faces of one and the same unitary entity, such as a concave and a convex face. Rather, mind and matter possess properties of their own, although they are rooted in the same monist background reality (see Fig. 3 below).

Relative dualism is similar to substance dualism in that the mind and the brain are seen as different and separable phenomena on the epistemic level. But it differs from substance dualism in that this dualism only pertains to the epistemic level, specifically to the mind and brain, but not to the ontic level. The latter is conceived to be unitary or monist. Hence, it seems appropriate to characterize this view as *relative* dualism. Already Kant stressed that it is possible to hold a monist view concerning the ontic domain and a dualist view concerning the epistemic domain.[5]

[5] According to Kant, "The transcendental idealist […] may be an empirical realist or, as he is called, a *dualist*; that is, he may admit the existence of matter without going outside his mere self-

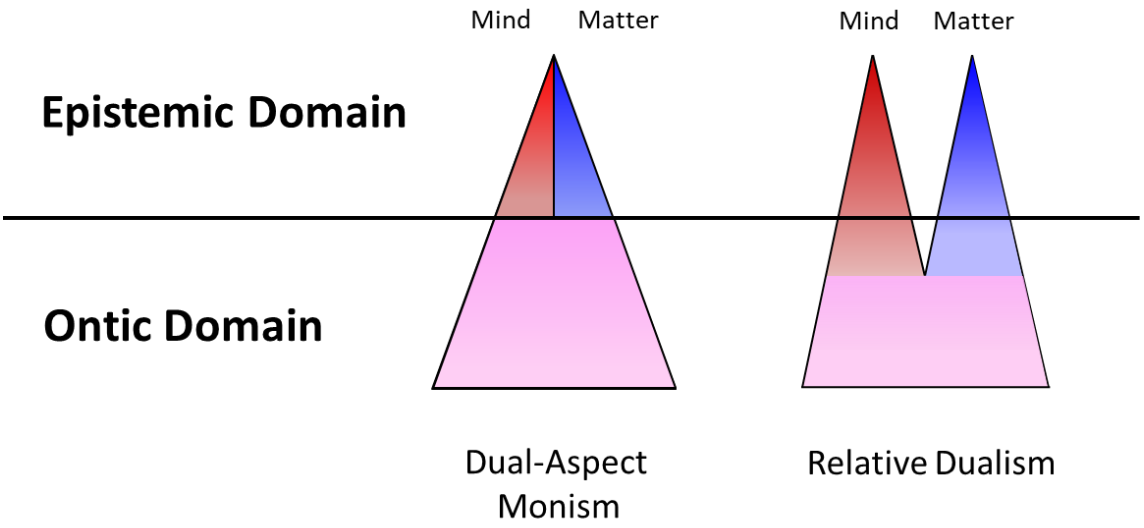

Fig. 3: Illustration of dual-aspect monism and relative dualism on grounds of a neutral monist position. Both are likewise conceivable in idealist philosophies, however. Dual-aspect monism is also conceivable in a physicalist model, but relative dualism is not.

Again, similar to substance dualism, relative dualism can account for NLC phenomena including CORT, NDEs, shared dreams, and macro-PK. And, similar to dual-aspect monism, relative dualism *per se* says nothing about the nature of the monist ontic domain. It can be hybrid, neutral, or spiritual as in objective idealism.

In fact, one the philosophers who argued most extensively in favor of a mild version of relative dualism on grounds of intricate natural-philosophical analyses, Eduard von Hartmann (1842–1906), was an objective idealist. His influential work on the *Philosophy of the Unconscious* bears numerous similarities to Schopenhauer's thoughts (von Hartmann, 1869/1911). But whereas Schopenhauer saw a blind will to live at the heart of existence, von Hartmann also attributed intelligence to this primordial source. He conceived the unitary third element in the ontic domain that gave rise to mind and matter in the epistemic domain as the absolute unconscious, calling this view *panpneumatism* (von Hartmann, 1908).[6]

consciousness, or assuming anything more than the certainty of his representations." (Kant, 1929, p. 346)

[6] In his tripartite approach, von Hartmann terms the ontic domain the "metaphysical sphere." The epistemic realms of mind and matter are termed the "subjectively ideal sphere" and the "objectively real sphere" (von Hartmann, 1907a).

In relative dualism, only physicalism is ruled out because it holds that aspects of the human mind cannot exist in states that are decoupled from material brain processes.

The following image summarizes the basic isms discussed above.

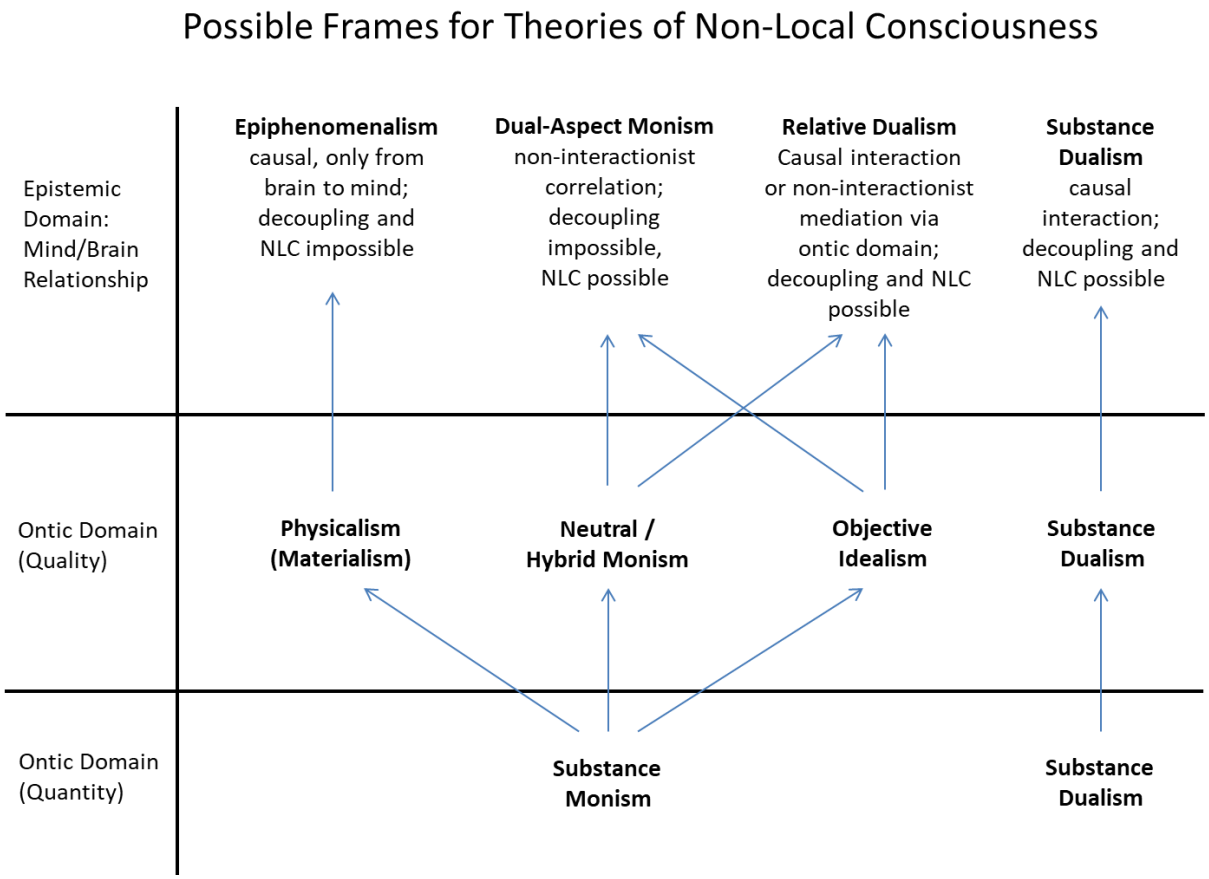

Fig. 4: Philosophical concepts concerning the ontic and epistemic domain and the most typically-proposed relationships between them. Other relationships are conceivable. For example, even an objective idealist can hold the notion that on the epistemic level, the mind is an epiphenomenon of the brain.

The distribution of mind in the epistemic domain

So far, I have introduced fundamentally important isms that specify philosophical positions regarding the ontic and epistemic domains of existence, with a particular emphasis on the mind/brain relationship and NLC.

In the following section, I introduce several other prominent philosophical isms grouped in "families" by their positions on two different questions.

First, various kinds of *psychism* concern the question of to what degree the constituents of our epistemic world possess mind- or consciousness-related features, meaning "mental" attributes of whatever kind, however rudimentary.

Second, there is a number of isms that concern the question of to what degree the constituents of our epistemic world possess attributes of being alive or not. This question essentially addresses different basic modes of functioning in the epistemic domain.

Among psychisms, the probably most familiar ism, *panpsychism*, refers to the notion that some kind of mind permeates the entire universe and everything in it. All material phenomena perceptible in the epistemic domain, even stones and subatomic particles, possess at least proto-mental aspects.

More recently, a concept called *cosmopsychism* has found its way into the literature. Here, the entire cosmos is thought to have mental states. However, this can be regarded as a variant of panpsychism (Chalmers, 2020; Marshall, 2021).

Panpsychism is compatible with objective idealism and hybrid monism including neutral monism. It can even be reconciled with substance dualism when assuming that all matter is naturally associated with some kind of mind. There have even been physicalists who maintained a panpsychist position, for example the prominent German protagonist of the Darwinian theory of evolution Ernst Haeckel (1843–1919). Leaving aside the question of whether such a position is logically coherent and still deserves the designation "physicalism," it is obvious that the supposed mental or psychic attribute of matter, including the human mind, can at best play a passive role in physicalist panpsychism. It can therefore not account for the NLC phenomena in question and is therefore irrelevant in the present context.

In *biopsychism*, however, mind-related properties are only attributed to living beings but not to inorganic objects such as stones and subatomic particles. In principle, biopsychism is compatible with most of the mentioned isms. But it is not compatible with dual-aspect monism, since according to dual-aspect monism, every material phenomenon must have a mental or psychic correlate. In *apsychism* nothing is thought to possess mental or psychic properties – including human beings. Such a notion is only conceivable within physicalism, specifically in some of its most drastic forms in which consciousness is regarded to be an illusion, such as in *eliminative reductionism* or *illusionism*.

In the 20th century especially, Western anthropologists have used the term *animism* to describe a widespread notion among Indigenous peoples. It goes even further than the usual version of panpsychism with regard to the distribution of mind-like attributes in nature. Whereas in panpsychism, all of existence is conceived to be pervaded by a mind-like feature, even if only proto-mental, animism holds that especially the biosphere of existence is decidedly animated. After all, the term "animism" is derived from the Latin word *anima,* "soul." Organisms in particular are thought to possess a distinct and individual soul, and are alive only as long as their souls stay in their bodies. When the soul leaves the body, the organism dies.[7] Panpsychism does not *per se* imply the additional existence of individualized souls or spirits. Nevertheless, since it is likewise implied in animism that the world is permeated by a spiritual principle, animism can still be regarded as a particular form of panpsychism. Or, in other words, animism implies panpsychism and hence, these isms are not mutually exclusive.

[7] There are many ways to describe animism, especially since there are many different forms of it adhered to by Indigenous societies around the globe. In fact, the overall concept of animism has been criticized as an oversimplified Western attempt to describe their spiritual traditions (e.g., Bird-David, 1999). In this essay, I nevertheless use this term in the above-mentioned sense, which is close to Steve Taylor's concept of "panspiritism" (Taylor, 2020). In short, Taylor suggests that mind permeates the universe, and that life forms have an individual consciousness or soul in addition.

Nevertheless, I will still treat animism as a separate ism in the following. In general, animism, panpsychism, and even biopsychism are compatible with the NLC phenomena in question.

Modes of functioning in the epistemic domain

The next family of isms I will briefly introduce concerns the important question of which modes of functioning exist in nature, specifically with an eye on potential differences between inanimate matter and organisms including conscious human beings.

In *mechanism* (the word here describing the philosophical model and not a mechanical device or process), all phenomena including living beings are thought to follow mechanical or physical principles of functioning. About a hundred years ago, mechanism was frequently discussed in fierce controversies regarding its main contender, *vitalism*. For vitalists, the phenomena of life, including consciousness and its non-local aspects, cannot be explained by physical mechanistic processes alone. In vitalism, organisms are thought to possess autonomous principles of organization, growth, and regulation that are not found in the inorganic realms of physics and chemistry.

In the past, many scholars who shared an interest in both biology and psychic phenomena adopted a vitalist approach to life. Three noted examples of "neo-vitalists" with such an interest are the philosophers Eduard von Hartmann, Carl du Prel and Hans Driesch (1867–1941). Other than earlier traditional vitalists who usually postulated a life-force of some kind, neo-vitalists explicitly distanced themselves from concepts of a life-force and argued that life would instead be characterized by specific modes of organization and causation. Likewise, many other vitalists of the 19th and 20th centuries attributed a holistic mode of functioning and a mind-like aspect to the principle that underpinned and governed the processes of life. In fact, Driesch's holistic vitalist philosophy of organisms

sparked the development of the concepts of *organicism* and *holism,* which I will describe shortly (see also Nahm, 2021a).

From today's perspective, the controversy between mechanists and vitalists faded out many decades ago. Progress in molecular biology and genetics in particular greatly fostered the notion that biology is entirely reducible to physicochemical processes, and vitalism is widely considered to be a misguided, obsolete approach today. Only very few contemporary biologists and philosophers still argue in favor of it (Nahm, 2007).

However, the term mechanism is not much in use anymore either. Due to the view that biological processes and phenomena including consciousness can be understood and explained by reducing them to physicochemical processes on the molecular level, the term "mechanism" has largely been replaced with the term *reductionism*. This term places more emphasis on the molecular building blocks that biology can allegedly be reduced to rather than on the mode of biological functioning – but the overall rationales of mechanism and reductionism are virtually the same. It is a thoroughly physicalist rationale.

In fact, although the term "mechanism" went out of fashion as a philosophical position, many reductionist authors still use the terms "mechanism" and "mechanistic" when describing biological processes – even in consciousness studies. For example, a team of researchers who aim at elucidating the factors that trigger NDEs in a physicalist manner frequently refer to "psychological mechanisms", "neurobiological mechanisms", and "neurophysiological mechanisms" that cause NDEs (Fritz et al., 2024). It is likewise not surprising that some of the most vocal critics of parapsychology, Arthur S. Reber and James E. Alcock, insisted that psi phenomena can never exist and that scientists would be better to focus their activities on the "world of normal science in all its mechanistic glory" (Reber & Alcock, 2019, p. 10).

But prior to this, from the 1920s onward, the controversy in natural philosophy circles between mechanism and vitalism was enriched by a concept today called *organicism*. It was conceived as a third way between these extreme positions. On the one hand, proponents of organicism such as Ludwig von Bertalanffy (1901–1971), the founder of general systems theory, agreed with vitalists that life cannot be explained in classical mechanist terms. On the other hand, organicists argued that life, including consciousness, is based exclusively on extremely complex non-mechanistic physical processes. This notion lies at the heart of contemporary systems-theoretical approaches and the concept of self-organization. According to organicists, it is unnecessary and misguided to invoke a specific biological organizing principle that would entail non-physical or mind-like properties.

Around the same time, the concept of *holism* was introduced into the debate concerning mechanism and vitalism as well. It was likewise depicted as a third way between mechanism and vitalism by its proponents, such as Jan Christiaan Smuts (1870–1950) and Adolf Meyer-Abich (1893–1971).[8] But holism in its original form differs from organicism in crucial respects: Whereas proponents of organicism maintain that physical matter is the foundation of our world and that life arises from interactions of complex material structures, holists maintain virtually the opposite. For them, the whole universe is a coherent living entity. Many holists consider mind to be the primary substrate of existence, thus subscribing to an idealist position rather than to a physicalist position. Life is deemed possible only because its organizing principles are rooted in a mind-related background layer of existence, whereas inorganic matter is thought to be the lowest and simplest form of existence. Hence, it can never give rise to life and consciousness by itself. Accordingly, holists including Smuts and Meyer-Abich considered NLC

[8] Adolf Meyer changed his name to Adolf Meyer-Abich in 1938, presumably to distinguish himself from other prominent figures named Adolf Meyer (Amidon, 2009). Abich was his mother's surname. Meyer-Abich was a prolific and innovative advocate of holism. He even coined the term "holon" to describe holistic properties of hierarchically nested systems of organization in organisms (Meyer, 1934-1935) – much earlier than Arthur Koestler, who is generally regarded as the inventor of this term (Koestler, 1967).

phenomena possible or an established fact, whereas organicists including von Bertalanffy, who attempted to reduce life to non-mechanistic physical processes in a systems-theoretical approach, had a very negative opinion about parapsychology.

However, as I have argued before (Nahm, 2007), the different concepts of reductionism, organicism, vitalism, and holism are not exclusive in principle, despite usually being depicted that way in past debates. They are so only when viewed from one particular direction: Reductionists with a physicalist background can perhaps accept organicism, but they must reject vitalism and holism (and they do!).

But viewed from the other direction, holists and vitalists do not need to reject organicism and reductionism. From a vitalist view, reductionism is not false per se – it provides a sound framework for researching and explaining lots of processes in the inorganic or biochemical domain of nature. It is only wrong to extrapolate reductionism to domains where it does not suffice anymore, such as the domains of organisms as wholes, consciousness, and NLC.

Similarly, vitalism and holism do not exclude each other. Even Meyer-Abich stated that "holism stands on the shoulders of vitalism" (Meyer, 1935, p. 28).

The isms described in this section can be viewed as applying to different levels of complexity, quality and functioning in nature.[9] They are not on equal footing and can therefore contain each other in a nested and hierarchical manner. Holists can imply or even presuppose that organisms cannot be explained in purely physical terms (vitalism), and they can naturally endorse system theories and self-organization in inorganic nature (organicism) as well as reductionism.

[9] Unfortunately, numerous authors have recently mischaracterized the gist of (neo-)vitalism and also mixed or confused organicism with holism, thus creating a farrago of unclear and effectively incoherent positions when speculating about the nature of life and the universe. A prominent example is Fritjof Capra (1996; Capra & Luisi, 2014); see Nahm (2007) for a discussion.

The applicability of these different isms can be conceived in the following manner (see also Fig. 5 below):

1. Reductionism: mechanistic behavior of inorganic matter; chemistry including biochemistry
2. Organicism: behaviour of complex non-animated systems, inorganic processes of self-organization
3. Vitalism: processes of life, consciousness, NLC phenomena
4. Holism: non-physicalist holistic foundation of the universe.

To conclude this chapter, I will depict the relationships of the many different isms I introduced above according to their context in the diagram on the next page. They can be combined in many different ways. For example, one can be a neutral monist, a relative dualist, a vitalist, and an animist all at the same time; it all depends on the context one is applying the isms to. Many other combinations of isms are conceivable. Figure 5 highlights a possible combination I consider plausible which allows for NLC phenomena.

A basic understanding of these issues is important for grasping the next chapters of this essay, as this review and comparative analyses of theories of NLC will distinguish the most appropriate models including their corresponding philosophical positions.

General Context	Specific Context	Possible Isms			
Epistemic Domain	Distribution of Mind	Apsychism	Biopsychism	Panpsychism	Animism
	Principles of Function	Reductionism (Mechanism)	Organicism	Vitalism	Holism
	Mind/Brain Relationship	Epi-phenomenalism	Dual-Aspect Monism	Relative Dualism	Substance Dualism
Ontic Domain	Quality	Physicalism (Materialism)	Neutral / Hybrid Monism	Objective Idealism	Substance Dualism
	Quantity		Substance Monism		Substance Dualism

Fig. 5: Illustration of the relationship of the different isms introduced in Chapter Four. Terms on the *same* level within a line are mutually exclusive. For example, one cannot hold the positions of substance monism and substance dualism at the same time. Terms on *different* levels within one line are not mutually exclusive. For example, since animism is a variant of panpsychism, one can hold both positions. Similarly, the isms in the line "Principles of Function" are not mutually exclusive since they pertain to different levels of organization. Hence, one can hold a vitalist notion regarding life processes, and a holist notion regarding the universe at large. The red line indicates possible combinations of isms corresponding to theories of NLC I consider plausible. Other combinations are of course possible as well.

Having set the stage, I will now finally turn to reviewing a wide variety of theories of NLC from different times and regions. In Chapter Four, "Theories of NLC up to the End of the 19th Century", I will introduce theories of NLC that have been *en vogue* from humanity's ancient past to the year 1900. Thereafter, in Chapter Five, I will introduce and discuss "Theories of NLC from the 20th Century up to the Present."

4 Theories of NLC up to the End of the 19th Century

4.1 Theories of NLC from Indigenous Peoples

The notion that NLC is an integral part of human existence, we may presume, is as old as mankind. Virtually all ancient cultural traditions around the globe shared the notion that the element that vitalizes living beings is their soul. This is a hallmark of animism. A part of this soul can temporarily leave the body – an important precondition for experiencing NLC phenomena in animistic traditions. When discussing the "soul journeys" of Australian Aboriginal peoples, dream research expert Kelly Bulkeley described this precondition as follows:

> "When a person goes to sleep, his or her dream-spirit […] is released from the physical body and is able to fly in the realm of the Dreaming. We have encountered different versions of this folk theory many times before, and more instances are still to come. The notion of dreams as the experiences of the liberated soul is so widespread in cross-cultural history that it should be considered the commonsensical human view, the cognitive default position for *Homo sapiens* reasoning about dreams." (Bulkeley, 2008, p. 236)

One can safely add: The idea that the "dream-spirit" is able to access or display features of NLC is likewise universal, and in fact is the default position for *Homo sapiens* reasoning about the capabilities of the soul. But also in both waking life and altered states of consciousness, human beings among Indigenous peoples – especially healers, seers, shamans, medicine men, and other spiritually-gifted and/or trained individuals – have displayed facets of NLC. In Australia, the so-called "clever men", "men of high degree", or diviner-curers were supposedly able to clairvoyantly perceive events at a distance, communicate telepathically, magically heal or curse other people, and perform a number of other remarkable feats (Elkin, 1977; Rose, 1968). Moreover, similar to gifted/trained individuals in countless other ancient cultures, they met deceased ancestors who continued to live in the

spiritual realm or dreamscape after their souls had left their physical bodies permanently. This realm was furthermore inhabited by various other spiritual beings, both malevolent and benevolent, including the spirits of animals.

However, in this worldview, the physical realm and the spiritual realm are not considered to be of entirely-different nature. They are considered to represent aspects of a holistic and unitary world that rests on a common ground and is permeated with spiritual properties. Just as matter possesses spiritual features, the spiritual realm and souls are thought to possess subtle-material properties. The border between these realms is permeable, and the spiritual is permanently present and superposes the physical. Therefore, the soul can travel in both realms in dreams and altered states of consciousness.

This non-local aspect of the dream-spirit played a particularly pronounced role in Australian Aboriginal traditions. It allowed them to travel to their homeland when being separated from it, to locate lost or stolen objects, to find out about the health of people in distant places, and to glean information about the imminent future (Tonkinson, 1970). Moreover, as in several other Indigenous traditions, the dream-spirit allowed people to dream the same dream together in shared dreams, as already described in Chapter Two. This Indigenous concept of soul journeys represents an "externalist" model in modern terminology, meaning that something equipped with perceptual abilities leaves the physical body and travels to external locations (Braude, 2003). In waking states, NLC faculties are likewise deemed possible. For example, effects on physical matter including living beings (macro-PK) are typically thought to be produced through externalized psychic energies or powers that are effectuated in magical practices and specific rituals.

However, in virtually all Indigenous traditions, not everybody could become a spiritual leader equipped with extraordinary NLC faculties. The potential shamans, seers, or healers had to be selected according to specific criteria, often by other people or even spirits. They furthermore underwent specific trainings to master their ability to utilize access to NLC. But ordinary people can spontaneously

experience NLC phenomena as well, for example when sensing that an emotionally close acquaintance or family member is in danger or dying (Rose, 1968).

Comments

Because souls of human beings continue a life on their own in the spiritual realm after death, animism naturally implies a dualist model for humans and their mind/brain relationship. Concerning the functional mode of organisms, it therefore implies vitalism. In animism, the soul of organisms is the indispensable vital principle that makes them grow into their species-specific shape, governs their actions, and enables their cognitive abilities. But because the epistemic aspects of the physical realm and the spiritual realm including souls are not considered to be of an entirely different nature in the ontic domain, typical animist worldviews comprise examples of relative dualism grounded on a hybrid monism. They can easily account for NLC phenomena such as NDEs including OBEs, CORT including cases of replacement reincarnation, shared dreams, and macro-PK.

For people living in animist traditions, such a worldview is perfectly apt and suffices as an explanation for their empirical experiences in daily life and at night. They have relied on it for thousands of years. From today's perspective, the main limitation of animism consists of its lack of an explanation of the causal modalities producing the exact interrelations of the physical and the spiritual, for example regarding the crucial question of how the soul interacts with the physical body and its physiology. This limitation, however, is not unique to animism. It is shared by virtually all other forms of interactionist dualism, be they substance dualisms or relative dualisms.

Features that set animism apart from many other theories of NLC include the notions that all living beings possess an individual soul, that even rivers, peculiar rocks, or mountains can be associated with a spirit or *genius loci*, and that a plethora of spirits exists that have no association with a physical body whatsoever. Though

empirical research in NLC phenomena has provided preliminary research results suggesting that at least higher-developed non-human animals possess NLC faculties (Sheldrake, 2011), and might even possess a soul that survives bodily death (Matlock et al., 2024), there is at present no scientific evidence for all the other types of spirits assumed to exist in animist traditions. But that does not mean that they cannot and do not exist.

4.2 Theories of NLC from Asian Esoteric Traditions

Esoteric traditions in India and Tibet share similar basic structures with Indigenous traditions although several subordinate features have undergone considerable changes. For example, they contain sophisticated theories about karma and reincarnation that are absent from Indigenous traditions. Moreover, they stress that experiencing individualized states of awareness in both the physical and spiritual realms conveys only relative and illusory realities. In order to accomplish this insight, sophisticated meditation practices were developed. In prominent teachings of Hinduism such as the Vedanta and Tantric traditions, it is argued that we need to overcome the cognitive constraints that create the epistemic domain of maya, be it physical or spiritual, and realize our oneness with the primordial source of being. Even gods are seen as illusory emanations from this unitary ground, brahman.

But in many respects, core elements of their precursor traditions still play an important role. For instance, the concept of subtle bodies and energies was retained and elaborated in great detail (for an exhaustive overview of various concepts regarding "vehicles of consciousness", see Poortman, 1978; Samuel & Johnston, 2013). And although the notion of the existence of individual spiritual souls was rejected in Buddhism in contrast to Hinduism, Asian esoteric theories of NLC still share very many congruencies. In the course of striving for enlightenment, NLC phenomena associated with subtle energies were deemed to be natural effects that would further illustrate the fundamental non-materiality of existence (Kelly &

Whicher, 2015; Radin, 2013). As in the older Indigenous traditions, these "siddhis" were usually attributed to the perceptive faculties of the subtle bodies and controlled application of vital energies termed "prana" in India, "lung" in Tibet, and "chi" in China, i.e., in terms of an externalist model. Moreover, the notions that some individuals are particularly gifted for eliciting siddhis and that these faculties can be accomplished and refined by training persisted. This includes frequent reports of NLC phenomena that occur in the context of close relationships, for instance when an advanced practitioner or master appears in a disciple's dreams, or appears to initiate other telepathic contact. Often, these esoteric traditions still contained elements from earlier shamanic traditions.

However, contemplation and meditation about the true nature of being, and the realization that individual existence is a cognitive construct that can be dissolved by merging with the unitary encompassing background reality in which concepts of space, time, and individuality do not exist, also allowed for the induction of an *internalist* mode of gleaning accurate information from distant locations inaccessible via the biological senses (Kelly & Whicher, 2015). In internalist models, ESP is not achieved by an element with perceptual faculties that leaves the body and travels to other locations, be they physical or spiritual. It is instead attained by immersing an aspect of the soul or the self into its own deeper layers in the primary ground of existence from which everything springs forth and is therefore connected with everything else. Generally speaking, these basic Hindu notions concerning NLC were carried over into later Buddhist traditions including those in Tibet and China. Especially in Buddhism, however, there was also a shift towards more explicitly idealist notions concerning the ontic domain compared to earlier Indigenous traditions.

This can be exemplified by an important treatise from the Dzogchen tradition of Tibet. Here, the personified Supreme Source at the heart of existence describes itself as follows:

> "I am the self-arising wisdom that has existed from the beginning. I am the fundamental substance of all phenomena that has existed from the beginning. I am the supreme source of everything, pure and total consciousness." (Norbu & Clemente, 1999, p. 138)

Comments

Regarding theories of NLC, the main innovations in influential esoteric traditions in Hinduism and Buddhism compared to Indigenous traditions consisted of the introduction of an internalist model in addition to the externalist model, and of a stronger inclination toward subjective and objective idealist notions. They also included sophisticated meditation techniques, philosophical frameworks, detailed lore about spirits and the spiritual realm, as well as detailed models of vital energies and health practices. Many of these practices would still be considered magic from today's perspective.

In the past, a great many authors concerned with NLC argued that the basics of Asian esoteric traditions are well compatible and connectible to current models and theories of NLC (for recent examples, see Kelly et al., 2015; Taylor, 2020). As such, they can account for NDEs, CORT, shared dreams, and macro-PK. Nevertheless, they provided no real advancement over Indigenous traditions concerning the precise causal modalities that would explain the manifestation of siddhis or the interaction of the mind and subtle bodies with the physiology of the physical body. I will discuss later in this essay how well later theories of NLC were able to come to grips with this problem.

4.3 Arthur Schopenhauer: NLC as Direct Manifestation of the Primordial Will

Concepts of subtle bodies have also been present in Western esoteric traditions, for example in Greek antiquity and neo-Platonism. In the 16th century, Paracelsus

maintained that human beings possess an *etheric body* – a concept that gained much popularity in the wake of somnambulism and spiritualism in the 19th century. Similar concepts were also incorporated into Western practices of magic.

An important Western author whose writings directly and indirectly influenced numerous refinements of Western theories of NLC was the German philosopher Arthur Schopenhauer (1788–1860). He repeatedly stressed that he had been most influenced by Kant and Plato as well as Hinduist and Buddhist scriptures. Schopenhauer was polyglot and very erudite. Apart from a sound knowledge of previous and contemporary philosophers, he had a great command of natural-science knowledge. This included a broad knowledge of NLC phenomena which he studied mainly in the literature on somnambulism. As I have introduced basic concepts of Kant's and Schopenhauer's philosophies already, I quote Schopenhauer at length in order to illustrate his thoughts on the nature of NLC phenomena.

The following excerpts are drawn from Schopenhauer's pioneering 1851 *Essay on Spirit Seeing and Everything Connected Therewith,* a remarkable text that brims with stimulating ideas. It epitomizes crucial elements of his idealist philosophy and is therefore of particular significance. Here is the gist of what he thought about NLC phenomena:

> "Animal magnetism, sympathetic cures, magic, second sight, dreaming the real, spirit-seeing, and visions of all kinds are kindred phenomena, branches of one stem. They afford certain and irrefutable proof of a nexus of entities that rests on an order of things entirely different from nature. For her foundation nature has the laws of space, time, and causality, whereas that other order is more deep-seated, original, and immediate. Therefore the first and most universal (because purely formal) laws of nature are not applicable to it. Accordingly, time and space no longer separate individuals and their separation and isolation, which are due to these very forms, no longer place insuperable barriers in the way of the communication of thoughts and the

direct influence of the will. Thus changes are brought about in a way quite different from that of physical causality with the continuous chain of its links; in other words, they are produced merely by virtue of an act of will that is brought to light in a special manner and thereby intensified to a higher potential beyond the individual. […]

But in this way, [these phenomena] first afford a confirmation, as unexpected as it is certain and factual, of Kant's fundamental doctrine of the contrast between the phenomenon and the thing-in-itself and of the antithesis between the laws of both. Thus according to Kant, nature and her order are mere phenomenon. As the opposite thereof, we see all the facts that are here considered and can be called magical, rooted directly in the thing-in-itself and in the world of appearance giving rise to phenomena that can never be explained in accordance with the laws thereof. They were, therefore, rightly denied until the experience of hundreds of cases no longer allowed this. Not only Kant's philosophy, however, but mine also obtains on a closer investigation of these facts important corroboration, namely that in all these phenomena the will alone is the real agent, whereby it proclaims itself as the thing-in-itself. […]

The above-mentioned phenomena furnish in any case an effective and perfectly certain refutation [of materialism]. In chapter 17 of the second volume of my chief work, I have described materialism as physics installed on the throne of metaphysics. These phenomena show that the order of nature, which materialism […] would have us believe to be the absolute and only one, is a purely phenomenal, and therefore merely superficial, order that is based on the essence of things-in-themselves, an essence that is independent of the laws of that order. But the phenomena we are discussing are, at any rate from the philosophical point of view, incomparably the most important of all the facts that are presented to us by the whole of experience. It is, therefore, the

> duty of every scholar and man of science to become thoroughly acquainted with them. […]
>
> [From] the philosophical point of view, animal magnetism is the most significant und pregnant of all the discoveries that have ever been made, although for the time being it propounds rather than solves riddles. It is really practical metaphysics, as magic was defined by Bacon; to a certain extent it is an experimental metaphysics. For the first and most universal laws of nature are set aside by it and hence it renders possible what was deemed impossible even *a priori*." (Schopenhauer, 2000, p. 265ff)

These excerpts highlight that Schopenhauer assigned enormous significance to studying NLC. One reason why he did is that he was convinced that they provided profound empirical support for his philosophy. As mentioned earlier, he disagreed with Kant that the ontic domain is entirely inaccessible for us. Schopenhauer argued that we *can* infer and know important properties of the ontic domain: It is the domain of a primordial spiritual will. Thus he agreed with important Hindu and Buddhist traditions and maintained a view of objective idealism.

Without offering noteworthy reasons for it, however, Schopenhauer advocated a purely internalist model regarding ESP. In contradiction of the ample source material he based his arguments on, distinct entities such as souls or subtle bodies that can move through space do not exist in his philosophy. For him, NLC phenomena are enabled by individuals' direct access to the absolute background reality, in particular regarding matters of particular interest or emotional involvement, such as dying.

The individual human intellect, however, would only be a function of the brain and would therefore die with the brain. In fact, Schopenhauer advocated a psychophysical parallelism, an identity view regarding the mind and brain. This logically implied for him that personal experiences and memories must vanish when the brain vanishes. Although he was convinced of the reality of reincarnation,

he thought that only a kind of non-personal core identity would be able to survive and reincarnate. At best, a largely unconscious aspect of the individualized will would be able to persist after death and produce hauntings or poltergeist phenomena (Schopenhauer, 2000).

Referring to Joseph P.F. Deleuze (1753–1835), an important practitioner of somnambulist healing techniques, Schopenhauer furthermore stressed that the phenomena of NLC displayed in somnambulism were comparably rare. Deleuze (1813) maintained that among a hundred patients, hardly even one would reach a clairvoyant state of somnambulism (Deleuze, 1813). In the context of animal magnetism, therefore, we find a reference to particularly gifted individuals, and likewise, the rapport between magnetizer and magnetized subject could be deepened by training both parties.

An important contribution of Schopenhauer to theories of NLC is his outright rejection of the notion that the laws of causality that govern physical processes on the epistemic domain can be applied to NLC phenomena. As quoted above, they "can never be explained" in terms of "physical causality", i.e., the form of causation that Aristotle famously termed "efficient causation." In contemporary reductionist and physicalist sciences such as classical physics, chemistry and biology, efficient causation is regarded to be the only form of causation that exists. It is the kind of "billiard ball causation" that makes one billiard ball cause the movement of another billiard ball once it hits it – a perfect example of a cause that leads to a subsequent effect. Even living organisms like human beings are considered to be very complex machines or "wet robots" whose development and behavior is exclusively governed by convoluted chains of cause and effect that move little billiard balls: the molecules that make up our bodies and brains.

But according to Schopenhauer, NLC phenomena are different. They are virtually defined by the fact that they do *not* follow the usual modes of causation that dominate processes and occurrences in the realm of inorganic matter. NLC phenomena spring forth directly from the ontic domain, from a deeper and

fundamental order of existence. For Schopenhauer, it was therefore futile to search for theories of NLC that rested on causal models prevailing in physics and chemistry. This line of reasoning became particularly prominent in the concept of "synchronicity" developed by psychologist Carl Gustav Jung. I will return to it in a later section.

Schopenhauer was thoroughly a vitalist who believed in the existence of a life force in organisms. More importantly, he insisted that also the development and growth of organisms cannot be explained in physicalist terms alone. Similar to NLC phenomena, organisms represent a different kind of manifestation of the will, driven by a goal-directed mode of functioning rooted in the background order of existence. For our modes of perception and cognition on the epistemic level, organic growth and function is mediated by a form of causation Aristotle termed *final causation*. In contrast to efficient causation, which always implies the unidirectional flow of time from past events to future events, final causation is more complex. The attribute "final" denotes that it is oriented towards a future goal. For example, being a tree can be seen as the final cause for a seed, or having dinner can be seen as the final cause for cooking a meal. This form of causation, in a sense, "pulls" developments towards their goal. It entails a future perspective and fulfils purpose – a key characteristic of all life.

Accordingly, Schopenhauer considered the core elements of the evolutionary theories of Jean Baptiste de Lamarck (evolution by transmitting individually acquired characteristics to the offspring) and Charles Darwin (evolution by variation of individuals and subsequent selection of the best adapted individuals) too superficial and incomplete. Like individual organisms, he contended, entire species would be phenomenal representations of aspects of the primordial will. Therefore, the modification of species in the course of evolution could only be possible through being driven by this will on the ontic level, not by mere transmission of traits by individuals (Schopenhauer, 1889; Hübscher & Fleiter, 1989).

Comments

Schopenhauer's idealist philosophy and theory of NLC can be seen as the first explicit attempt to merge Asian esoteric traditions with Western philosophy and science. Overall, he was convinced that the entire epistemic domain rests on the will, which is a non-local, spiritual foundation of existence. It can therefore account for ESP, shared dreams, and macro-PK – but as mentioned, it cannot account for individual postmortem survival. Hence, from a Schopenhauerian perspective, CORT including cases of replacement reincarnation need to be interpreted in terms of psi faculties of the living (Alvarado et al., 2012). On close inspection, however, this view faces considerable theoretical difficulties (Nahm, 2023a).

Similar to many other authors on the NLC phenomena of his time, Schopenhauer provided no explicit attempt to explain them in causal terms, no matter which form of causation. For him, attributing their origin to a transcendent cause in the ontic domain sufficed as a causal explanation. But as I will argue later in this essay, Schopenhauer nevertheless provided pioneering ideas that stimulated novel approaches for tackling the problem of the origin of NLC phenomena.

Next, I will introduce an author and thinker who followed Schopenhauer in important respects: the aforementioned philosopher Carl du Prel. He provided a synthetic theory of NLC that encompasses several previous concepts and contains novel contributions. I chose to present the work of du Prel in this essay because his writings provide an excellent representative example of theories of NLC put forward prior to the end of the 19th century.

4.4 Carl du Prel: NLC as a Feature of the Transcendental Subject

Although Carl du Prel was widely known in Germany, his publications have not been discussed much in the English literature on NLC. Nevertheless, it seems likely that he had influence on prominent English-speaking theorists of NLC including

Frederic W.H. Myers (1843–1901). Myers certainly advanced very similar thoughts in England shortly after du Prel's writings had been published in German (Grosso, 2015; Sommer, 2009), and it has been established through archival evidence that Myers was familiar with du Prel's German texts, including his voluminous treatise on the "Philosophie der Mystik" (Andreas Sommer, personal communication, 20.06.2024). This massive 545-page book was first published in German in 1884 (though dated to 1885) and translated by Myers' friend Charles C. Massey (1838–1905) (du Prel, 1889). In the 15 years prior to his untimely death from tuberculosis, du Prel published numerous fascinating treatises, including a book on mysticism and NLC phenomena in antiquity (du Prel, 1988b), and a two-volume treatise on "magic as a natural science" (du Prel, 1899) in which he advocated experimental studies of NLC phenomena and their integration into academic research.

In general, du Prel followed a neo-Kantian and neo-Schopenhauerian line of thought that was inspired by, among other sources, Gustav T. Fechner and Baron Lazar von Hellenbach (1828–1887). But in line with Hellenbach (1876), du Prel argued that Schopenhauer's approach of linking the appearances of individual beings *directly* to the most basic foundation of existence was unwarranted. Following empirical evidence, he contended, it would be much more likely that there are intermediary organizational and structural steps before the ultimate root in the irreducible ontic absolute is reached. In du Prel's view, the study of dreams, mysticism, genius, magic, somnambulism, hypnotism, psychophysiological influence on the body, spiritualism, and a variety of near-death phenomena including what is today called terminal lucidity provided ample empirical evidence not only for NLC and its roots in the arcane nexus, but also for the factual existence of an individual soul.[10] Many of du Prel's writings develop arguments that

[10] To my knowledge, du Prel (1888a) compiled the largest collection of cases of terminal lucidity from before the time I coined this term and published about it. He did not use a specific name for these incidents, however. His case collection was a major inspiration for my delving into this phenomenon, retrieving the original reports he cited, and making them available again along with numerous other case reports I collected elsewhere (Nahm, 2009, 2012b; Nahm & Greyson, 2009).

speak for the soul's existence – and its survival of bodily death. Below, I summarize four elements of du Prel's theory of the soul and NLC.

Du Prel's internalist model of NLC

The most important contribution of du Prel to theories of NLC is a multifaceted elaboration of an internalist approach to understanding its manifestations and corollaries. He argued that the ordinary waking state constituted only one part of our individual existence, and there existed a large part of the human condition usually hidden from our conscious awareness. It is unconscious, at least for our waking self, and stratified in depth. Adopting a term sometimes used by Kant, du Prel called it the "transcendental subject." This stratified transcendental subject constituted the intermediary that linked an individual being to the ontic foundation of existence. It therefore would transcend space and time. According to du Prel, the conscious mind as experienced in the epistemic domain is separated from the transcendental subject by a threshold he called the "threshold of sensitivity" or, using a term coined by Fechner, the "psychophysical threshold."

Du Prel considered this threshold movable. Especially when the functions of the intellectual mind or brain were diminished, as in states of dreaming, somnambulistic sleep, trance, or near-death states, non-local aspects of the transcendental subject, insights of genius, and mystical experiences could rise into conscious awareness (du Prel, 1888a, 1889). Similarly, strong emotions such as love and fear could facilitate the movement of the threshold. As is typical of authors sympathetic to spiritualism, du Prel argued that certain "sensitive" people, i.e. mediums, were particularly gifted for lowering their threshold of sensitivity, and he also maintained that the access to NLC could be trained, and would naturally develop further in the course of evolution. For him, the faculties of the transcendental subject were always present but usually imperceptible – just as the stars are always present but only become visible after sunset. Hence, in order to

study and understand the human condition as a whole, du Prel advocated a "transcendental experimental psychology", maintaining that we need to experimentally induce altered states of consciousness that enable the investigation of the transcendental subject. He furthermore considered dreams to be the entranceway to metaphysics because in them we could encounter phenomena pertaining to the transcendental subject most easily.

Overall, du Prel's publications about the transcendental subject are intriguing, rich, innovative, and written in powerful language full of appealing metaphors – but it is beyond the scope of the present essay to go into more detail. In any case, they bear close similarity with Myers' writings about the "subliminal Self" separated by a permeable membrane from the conscious self. Myers even used the term "psychophysical threshold" for this membrane on occasion as well (Sommer, 2009). Much of what has recently been written about Myers' work on the subliminal Self, for example in the seminal book *Irreducible Mind* by Edward F. Kelly and collaborators (Kelly et al., 2007), could also have been written with reference to du Prel's work. In fact, William Braud (2002) quipped that just as philosopher Alfred North Whitehead once suggested that the European philosophical tradition consisted of a mere series of footnotes to Plato, it might not be inappropriate to suggest that much within the traditions of NLC research and of explorations of the unconscious is merely a series of footnotes to Myers and du Prel. I leave it to the reader to decide how much this appraisal is warranted.

Du Prel's dual-aspect approach

In du Prel's philosophy, the soul or transcendental subject is not of a purely mental or spiritual nature. He insisted that it must possess a material aspect as well – more precisely, an aspect of subtle matter. In accordance with numerous traditions and authors he relied on, beginning with Aristotle, du Prel argued that the soul is the unitary transcendental source that gives rise to two aspects of organisms in the

epistemic domain: It organizes their physical appearance and mediates their spiritual or mental faculties. Regarding the relationship of the body and the mind, he stressed that

> "body and mind do not stand in a causal relationship to each other at all, but only in a relationship of co-ordination; only such a relationship can join the apparently opposing facts together. […] Both materialistic monism and [idealist monism] are therefore false, and only that monism remains in which body and mind are emanations of a common third principle which both organizes and thinks." (du Prel, 1888a, p. 116)

This third principle is the transcendental subject. Du Prel (1888a, 1889) called his position "the monistic doctrine of the soul." It is striking that virtually identical formulations regarding the relationship of mind to body can be found in current streams of dual-aspect thinking, particularly in the context of neutral monism. However, du Prel advocated this monism only for the soul. He largely abstained from making explicit ontological claims regarding the nature of the absolute. But because he stressed repeatedly that the spiritual is primary over matter, it is likely that he would have favored a form of idealism-slanted hybrid monism for the ontic domain at large.

In that du Prel rejected materialist notions of life and attributed the properties of organisms to a transcendental non-physicalist source, he was of course a vitalist. He considered the transcendental subject to be stratified, thus effectuating different kinds of consciousness-related and organizational functions. Du Prel nevertheless rejected the position of traditional vitalists who invoked a "life force" to explain the functional mode of organisms, including their development. Rather, he attributed these functional modalities to an aspect of the transcendental subject and its roots outside of time and space. Borrowing a term and concept from Aristotle, du Prel (1888a) called the organizing principle that governs the development of organisms "entelechy." This Greek term can be translated as "that which bears its goal in itself."

According to du Prel, this transcendental formative principle was also responsible for determining the shapes of apparitions of the living and the deceased. In fact, du Prel related it to a subtle body that would comprise both mental and physical properties, following many sources he relied upon. In certain conditions, subtle matter emanating from the transcendental subject would also be able to affect the epistemic domain. This highlights that in addition to the internalist model for NLC, du Prel maintained an externalist model.

Du Prel's externalist model for NLC

In comparison to du Prel's thought on NLC from the internalist perspective, his thought on the externalist model contains little innovative material. He insisted that everything that happens in the epistemic domain must have a cause. Therefore, occurrences that cannot be explained via chains of efficient causation within the epistemic domain, such as NLC phenomena, must have their cause in the transcendental domain. This cause would be the transcendental subject. But apart from stressing that processes mediated via the transcendental subject would not entail efficient causation, du Prel did not provide an explanation about how it would cause these processes in the epistemic domain.

Although he rejected the notion of a life force with an organizational function in organisms, du Prel endorsed the concepts of subtle bodies and subtle energies. In this respect, his rejection of a life force in organisms appears inconsistent. He argued that if one accepts that the transcendental subject possesses an aspect that structures and organizes the physical body, it must possess a structural or organizational aspect itself. It must have a spatial aspect, an extension of some sort. It cannot be not a mere "thinking substance" without extension, like the soul in Descartes' version of substance dualism. But since this spatial aspect of the transcendental subject is non-physical, du Prel used the concept of a subtle body to refer to it. It can furthermore project subtle energies outward. Du Prel even

adopted the concept of the "od" as a subtle energy postulated by Karl von Reichenbach (Nahm, 2012a). These non-physical properties of the transcendental subject, he argued, would not only cause the organization of biological bodies, but also enable NLC phenomena including macro-PK.

According to du Prel, the astral body is the form in which the soul survives bodily death. In contrast to Schopenhauer's view, this intermediate structure of subtle matter can also retain personal memories. When the transcendental subject detaches from the physical body and the brain, the mental faculties that are constricted by the brain are freed, enabling some of the soul's more encompassing transcendental faculties to pass the body's threshold of sensitivity and rise into conscious awareness. In modern terminology, he proposed a "filter model" regarding the functions of the brain (Grosso, 2015), a concept that was widespread in the discourse on somnambulism.

Overall, du Prel's concept of the subtle body bears quite some similarity with Ian Stevenson's concept of the "psychophore" (Stevenson, 2001). Stevenson coined this new term in order to avoid the connotations associated with the term "subtle body." In essence, it constitutes a "vehicle of consciousness" (Poortman, 1978) persisting after bodily death that may also facilitate reincarnation, a phenomenon of which du Prel was also convinced.

The origins of hyperdimensional theories of NLC

In the 19th century, several authors advanced speculations about a fourth spatial dimension in nature. Some of them, like Fechner (1846), illustrated this idea by an analogy: Imagine a little man who lives on a two-dimensional surface as shadows do, and is biologically adapted to perceive only these two spatial dimensions. He would never be able to understand three-dimensional structures and processes that are trivial to realize for organisms that are adapted to a three-dimensional world. We might be in a similar condition regarding the hypothetical fourth spatial

dimension; it might exist without us being able to perceive and comprehend it. This analogy and its implications bear much similarity with Plato's cave analogy. It was later made famous by a novel about two-dimensional geometrical people living on *Flatland*, a two-dimensional world (Abbott, 1884).

Karl Friedrich Zöllner (1834–1882), an acquaintance of Fechner and a renowned professor of astrophysics, sympathized with the concept of a four-dimensional space for a number of chiefly philosophical reasons. He was thoroughly acquainted with the philosophy of Kant, who argued that the three familiar dimensions of space were only an epistemic, subjective construct and that the phenomenal world might well rest on higher dimensional structures. Furthermore, Zöllner sympathized with the approach of Bernhard Riemann (1826–1866), an eminent mathematician who, among numerous other achievements, elaborated a mathematical model describing how a three-dimensional space could be curved in a higher-dimensional space. This concept served later as the foundation for Albert Einstein's theory of general relativity. Like Zöllner, Riemann held Fechner's writings about the human soul and NLC phenomena in somnambulism in high esteem. Based on some of Riemann's statements, Zöllner was convinced that Riemann was inspired by Fechner's writings about these subjects to develop his higher-dimensional mathematical model (Zöllner, 2008).

When Zöllner learned about spiritualist mediums and their feats, he attempted to study them in order to obtain empirical evidence in support of a higher-dimensional theory of the universe. In 1877 and 1878, he took the opportunity to conduct a series of more than 30 experimental sittings with controversial physical medium Henry Slade (1836–1905).[11]

[11] It is sometimes claimed that Zöllner invoked a fourth dimension in order to explain psychic phenomena. This is not entirely correct. Rather, Zöllner postulated the fourth dimension for other reasons, prior to his experiments with Slade. These experiments were instead designed to provide empirical support for his existing theoretical constructs.

Such a hyperdimensional concept would offer a plausible explanation for apport phenomena, i.e. the inexplicable transportation of an object into a closed space. In the two-dimensional analogy for apport phenomena, a shadow-man would not be able to grasp how it is possible to lift an object from a surface and place it elsewhere. According to Zöllner, who invited Fechner to participate in these sittings, Slade was able to produce genuine apport phenomena and perform other psychic feats that seemed to confirm the facticity of a four-dimensional space (Treitel, 2004). Zöllner (1881) considered it possible to explain mental phenomena of NLC with his model as well.

Du Prel was personally acquainted with Zöllner and sympathized with his concept of a higher dimension. He maintained that the transcendental realm beyond the threshold of sensitivity might well imply such a feature, but did not go into any detail.

Comments

Carl du Prel's theory of NLC can easily account for shared dreams, NDEs, CORT, and macro-PK. In contrast to Schopenhauer, du Prel took pains to establish the facticity of the human soul as an individualized agent in the sense of the transcendental subject. Moreover, though he explicitly promoted a dual-aspect approach according to which there is no causal relationship between mind and brain, he did not endorse psychophysical parallelism as in traditional dual-aspect thinking. For him, it was clear that reduced or disturbed brain functions would provide conditions that could enable extraordinarily heightened mental functions. On the grounds of an idealism-slanted monism regarding the ontic domain, du Prel therefore adopted a relative dualism regarding the epistemic domain.

Overall, du Prel aimed at developing previously existing Western and Eastern theories of NLC further by placing them into a coherent philosophical and scientific worldview. An important aspect of his approach consists in emphasizing

the significance of the unconscious in life and thus also for the mediating of NLC phenomena. His synthetic approach represents a prime example of theories of NLC at the end of the 19th century that aimed at accounting for the full spectrum of NLC phenomena. Its basic assumptions still bear numerous similarities to models held by Indigenous peoples and Asian esoteric traditions. Only the hyperdimensional approach introduced by Zöllner constitutes a truly novel contribution and an attempt to integrate NLC phenomena into innovative ideas in physics.

4.5 Summing Up: Theories of NLC up to the End of the 19th Century

In the previous sections of this chapter, I reviewed the important steps in theorizing about NLC up to the end of the 19th century, beginning with early positions held by Indigenous peoples. When extracting these theories from culturally-molded elaborations and idiosyncrasies, several core features remain present in all of them.

The most prominent of these core features is the arcane nexus, the permanent immersion of individual beings in a non-physical background reality where everything is connected. This constitutes a decidedly holistic approach. It can be regarded as the default position concerning NLC of Indigenous peoples, Asian esoteric traditions, idealist philosophies, idealism-slanted hybrid monisms, and the viewpoints of very many researchers of somnambulism, spiritualism, and NLC phenomena.[12]

An important difference between the theories of NLC introduced above concerns the question of the existence of individual souls and their postmortem survival. For

[12] In the 19th century, there were also physicalist theories of NLC. Here, psi phenomena were usually attributed to the ether as the connecting and conducting medium. The existence of the ether widely accepted in physics until Albert Einstein developed the Specific Theory of Relativity. But since 19th-century physicalist theories of NLC are not considered in this essay, I refer the reader to an informed overview (Noakes, 2018).

example, Buddhists and Schopenhauer doubted the existence of such a soul, and Eduard von Hartmann, for many years a mentor and friend of du Prel, similarly rejected the notions of a soul or subtle body and therefore, that of personal survival. Although von Hartmann also endorsed a relative dualism on a monist foundation, he remained closer to Schopenhauer's thinking and argued that survival phenomena can be explained by psi faculties of the living more parsimoniously (Alvarado et al., 2012; Nahm, 2023d). But apart from these differences, von Hartmann's theory of NLC bears much similarity to that of du Prel. He postulated as well that all of existence and all beings are connected on a fundamental and usually imperceptible background of existence. Von Hartmann coined the metaphorical phrase that people experiencing telepathy would possess a "telephone connection in the absolute" (von Hartmann, 1891), a phrase widely cited among later German psychical researchers.

In the English literature, a prominent parallel can be found in the writings of Frederic Myers and William James (1842–1910). James, who is regarded by many as the founder of psychology in America, was a friend of Myers and held his work in high esteem. He was also familiar with the work of du Prel. But like von Hartmann, and unlike his friend Myers, James remained skeptical of the existence of souls as individualized entities and their postmortem survival. Still, in his last essay on psychical research, *The Final Impressions of a Psychical Researcher*, published in 1909, he maintained that for himself, "one fixed conclusion dogmatically emerges" as a result of his studies of psychic phenomena. It is the arcane nexus (see also Fig. 6):

> "We with our lives are like islands in the sea, or like trees in the forest. The maple and the pine may whisper to each other with their leaves, and Connecticut and Newport hear each other's foghorns. But the trees also commingle their roots in the darkness underground, and the islands also hang together through the ocean's bottom. Just so there is a continuum of cosmic consciousness, against which our individuality builds but accidental fences, and into which our several minds plunge as into a mother-sea or reservoir.

Our "normal" consciousness is circumscribed for adaption to our external earthly environment, but the fence is weak in spots, and fitful influences from beyond leak in, showing the otherwise unverifiable common connection." (Murphy & Ballou, 1969, p. 324)

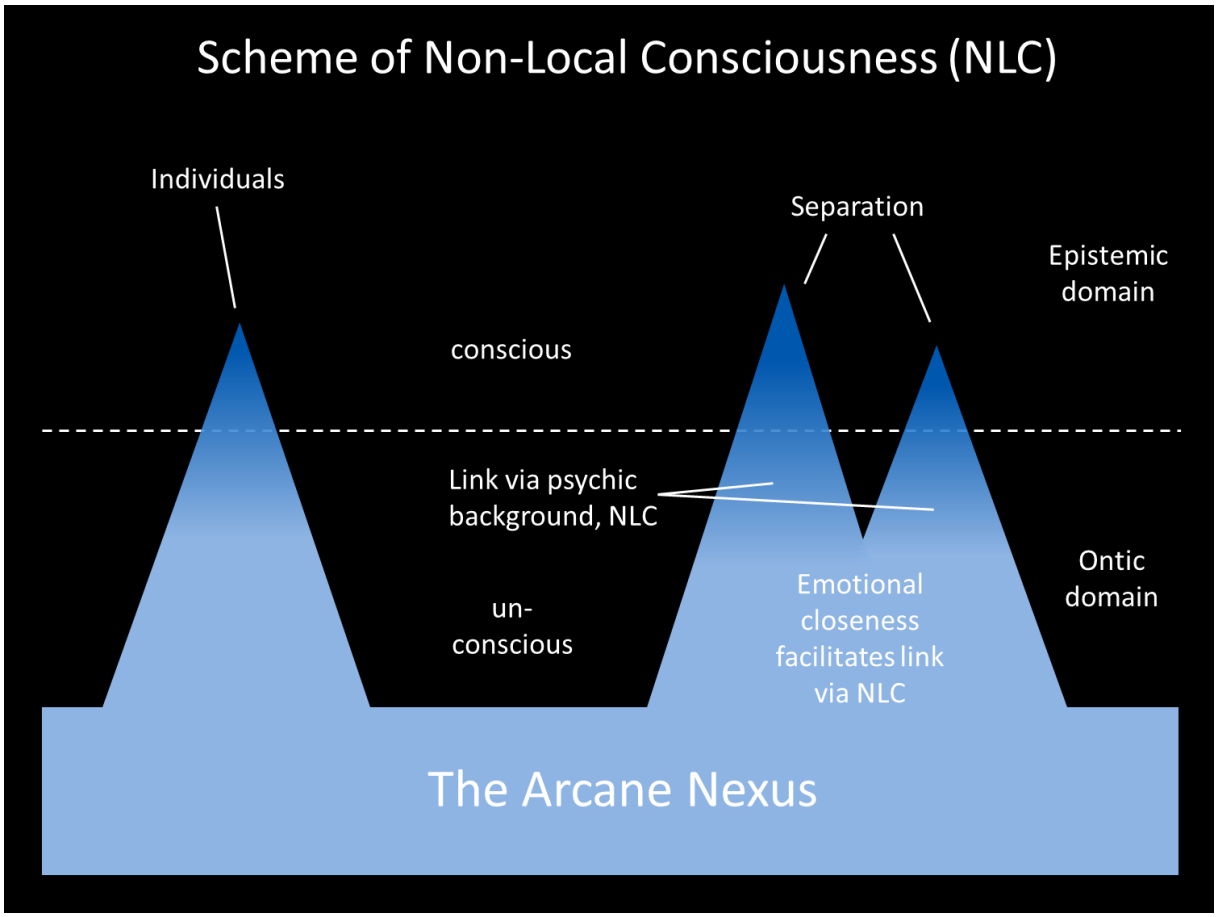

Fig. 6: Illustration of the dominant common feature in theories of NLC until the end of the 19th century: The rootedness of individual beings in a collective non-physical realm, here called the arcane nexus. The separation of individuals as perceived in the epistemic domain does not exist in the ontic domain, of which we are usually unconscious.

Moreover, many authors in both camps (those who believed in souls and those who did not) typically agreed that the mind must possess structuring or organizational faculties. Those arguing in favour of postmortem survival especially attributed subtle material properties to the soul. A fully-fledged substance dualism according to which the mind is a mere "thinking substance" à la Descartes was

usually not maintained in these theories of NLC. Rather, many authors subscribed to a relative dualism that was grounded in hybrid monism or objective idealism, although they often did not specify the ontology of their position.

Regarding the mode of function of organisms, all theories introduced above imply vitalism. Its proponents thought that manifestations of life including NLC phenomena follow different modes of functioning than that governing the behaviour of inanimate matter – but again, the authors often were not explicit about this. Moreover, they frequently endorsed holism with regard the world at large, as it is typical for ontologies based on hybrid monism and objective idealism. Many subscribed to a panpsychist view, or particularly, in Indigenous traditions and spiritualism, to animism.

As I come to the close of this chapter, it seems worthwhile to summarize the core assumptions of pre-20th century theories of NLC. They can be condensed as follows:

1. Behind the scenes of the ordinarily-perceived epistemic domain, there is a background reality at the ontic heart of existence in which all beings are rooted and connected: The arcane nexus.
2. This ontic background reality is of a non-physical nature. It transcends space, time, and the usual mode of causation. It was typically conceived as a hybrid monism or objective idealist monism.
3. In organisms, the cognizable epistemic domain is separated from this background reality by a movable threshold of sensitivity. Phenomena of NLC occur most readily in altered states of consciousness when ordinary mental function is diminished or disturbed, lowering the threshold of sensitivity.
4. Spontaneous NLC phenomena that involve psi interactions between two or more people occur most readily among people who know each other and often involve strong emotions.

5. There are people with a particularly pronounced access to NLC. Such gifted individuals can improve their ability to gain purposeful access to NLC through intensive training.

But while these theories are rich in empirical source material and philosophical speculations, they usually remained on a rather general level. They were vague with regard to more specific and practical scientific questions: If not efficient causation, what kinds of causation mediate NLC phenomena such as ESP or macro-PK? What is the relation of NLC to the brain and body?

It is now time to turn to psychical researchers of the 20th and 21st centuries in order to see whether these questions have been tackled more rigorously by later authors – and if so, how. Throughout the next chapter, I will provide remarks on historical aspects of NLC research in order to demonstrate the continuity of thought and concepts over time.

5 Theories of NLC from the 20th Century Up to the Present

5.1 Towards New Horizons? Inventing Parapsychology and its Terminology

In parapsychology, the first half of the 20th century was characterized by numerous innovations. First, several researchers established laboratories and institutes specifically devoted to studying NLC phenomena under controlled experimental conditions. The first of these facilities was probably the short-lived Psycho-Physical Laboratory that Floris Jansen founded in 1906 in Amsterdam (Nahm, 2012a). These laboratories were often designed to investigate psi abilities of gifted individuals, such as physical mediums. By establishing these facilities and introducing a new terminology for psi phenomena that mirrored practices and concepts of established mainstream sciences, these authors aimed at connecting their research objectives to academia (Nahm, 2023d).

In the 1930s, a further shift in practical parapsychology commenced when Joseph B. Rhine (1895–1980) began conducting large experimental series in controlled laboratory settings at Duke University in Durham, North Carolina. These quantitative experiments and the statistical analyses that followed were even more strongly modeled after conventional research practices in the mainstream sciences. For example, samples of people from the general population would perform telepathy experiments in which the "sender" would look at symbols on cards and the spatially-distant "receiver" would guess these symbols. Similar experiments with decks of cards were conducted regarding clairvoyance and precognition. In PK experiments, subjects would attempt to influence the throwing of dice. Over the years, these kinds of experiments became progressively more mechanized to minimize potential human influence on their results. In all variants of experimental test series, the statistical analysis of thousands of individual trials yielded highly significant results.

Rhine's quantitative experimental approach led to the development of increasingly refined methods of control, and sparked comparable experiments in which random event generators based on, for example, radioactive decay, had been employed. He also coined the generic term "extra-sensory perception" (ESP) for telepathy, clairvoyance, and precognition.

Rhine was first and foremost an experimental scientist with little interest in theory. Nevertheless, he could not refrain entirely from drawing theoretical conclusions. Some of Rhine's considerations concerning NLC can be summarized as follows (Rhine Feather & Ensrud, 2023; Stokes, 1987):

- All evidence points to psi as mental and not physical.
- Psi functions on an unconscious level.
- Telepathy, clairvoyance, precognition, and PK are parts of a unitary process.
- Though some individuals are more gifted than others, the evidence suggests that psi is a natural and universal aspect of human nature.
- Agency of the mind can function to some extent independently of the physical body and spacetime. This agency might be a peculiar kind of mind-related energy that is radically different from material energies. It can "go out" from the percipient, select, and perceive the target – be it an object or somebody else's thoughts.

In essence, Rhine maintained a typical non-physicalist externalist approach regarding NLC, although his conclusions were drawn from a different investigatory approach than that of the 19th century. He maintained that PK involves a particular natural force, a non-physical "psychokinetic force" by which the mind can influence the behavior of matter (Rhine, 1947). A similar externalist model had been advanced by Robert H. Thouless and Berthold P. Wiesner. Very many know a term they coined: Psi phenomena. Thouless and Wiesner introduced it so as to create a common and neutral generic term for ESP and PK phenomena. For this,

they chose the letter "psi" from the Greek alphabet, the first letter of the word "psyche" (Thouless, 1942).

In a later publication, the authors highlighted that we can never cognize objects in our environment directly but only though the mediation of the nervous system and the brain. The difference with ESP is only that we cognize objects directly in such instances, without the intervention of the nervous system and the brain. It is an "exo-somatic" process of cognition, compared to the "endo-somatic" process of ordinary cognition. But in essence, both forms of cognizing are comparable. Psi ability is enabled by an entity traditionally referred to as the soul. However, Thouless and Wiesner intended to avoid connotations associated with the term "soul." Just as they had introduced the term "psi phenomena", they now suggested referring to this psi-mediating entity by the Hebrew letter "shin" (Thouless & Wiesner, 1947).

With regard to the cognitive abilities of shin, Thouless and Wiesner stated that they were not aware of previous authors having postulated that psi is already involved in ordinary sensory perception, bringing the incoming physicochemical sensory stimuli about the external world to conscious awareness. But in fact, German biologist, philosopher and parapsychological theorist Hans Driesch (1938) had suggested this very postulate already (for more information on this influential author see Nahm, 2021a, 2021b, 2024).

As a result of his studies in biology and parapsychology, Driesch advanced a decidedly dualist notion regarding the mind and brain on the epistemic level. Regarding the ontic domain, he remained agnostic but sympathized with an idealism-slanted monist view according to which what we perceive as mind and matter emanates from an encompassing unitary principle that transcends space and time. He thus only held a relative dualist view concerning the epistemic domain.

Driesch tirelessly reminded his readers that the world is full of mysteries for which science has no explanations. For example, he maintained that the means by which

the perception of a supposedly external physical object is translated into a mental experience by a subject is incomprehensible. Proposing that the ontic domain possesses mind-like features, he suggested that NLC abilities such as ESP might be a primordial phenomenon in which a mental subject would be in direct contact with the mental aspect of an object. This would for the most part be easier to grasp than perception of external objects via the complicating detour of material physicochemical stimuli plus their processing in the brain and their subsequent translation into mental experience. Hence, for Driesch, all perception is incomprehensible without a mediating psychic element and therefore, all perception must involve psi (Driesch, 1938).

Moreover, the direct cognition of percepts, such as in clairvoyance, is an indicator that all reality is fundamentally connected. The physical body merely serves as a means to limit and channel percepts and the resulting experiences, but every percept and cognitive process, even memory, nevertheless involves the unconscious utilization of ESP (Driesch, 1935). Similarly, PK might play a continuous unconscious role in everyday life, not only in morphogenetic processes, especially those developing in response to (auto-) suggestion, but also in taking action, e.g., by prompting the nervous system to move an arm (Driesch, 1933). As du Prel before him, but without reference to him, Driesch introduced the Aristotelian term "entelechy" to name this organizational principle and highlight its relationship to NLC phenomena.[13] Especially in the context of governing behavior and taking action, he conceived it to be equivalent to what has also been conceived as the soul (Driesch, 1939).

This notion mirrors the gist of the concept and function of shin proposed by Thouless and Wiesner – and of course, earlier concepts of the soul as an entity with

[13] Driesch's philosophy bears very many similarities to du Prel's philosophy. Driesch must have been well aware of du Prel's writings, and not only because they even had mutual acquaintances such as Eduard von Hartmann and Albert von Schrenck-Notzing. Hence, it seems strange that Driesch never mentioned du Prel in his publications, at least that I am currently aware of, though I am familiar with a very large portion of Driesch's work.

both mental and organizing properties. And although the tenet that psi is the most fundamental way of perceiving and is involved in all cognition of percepts might not have been expressed in such explicit terms in the 19th century, it was in fact implied in theories that relied on a holistic soul that, like the transcendental subject of du Prel, animated organisms and mediates cognition under *all* conditions of existence including disembodied states. Du Prel maintained that human beings are constantly immersed in the transcendental ontic domain in their lives and only the threshold of sensitivity hinders a fuller realization of our true nature. Similar to Driesch, he argued that our existence in a physical body of flesh and bones is in fact much more astonishing than the existence as a disembodied entity (du Prel, 1888a).

The examples above demonstrate that despite some practical, theoretical and terminological innovations, the basic structure of 19th century theoretical concepts regarding NLC was still maintained in the first decades of the 20th century by prominent figures in the field.

Other theories of NLC advanced in the 20th century have been summarized and compiled in reviews by K. Ramakrishna Rao (1978) and Douglas M. Stokes (1987). Rao only covered treatises published after 1900, but he nevertheless stressed that "there are more theories than can be reviewed in this chapter" (Rao, 1978, p. 246). For his review, he selected about 25 theories that were advanced by different authors, though he observed that many of the theories he surveyed were "tentative and exploratory hypotheses, often no more than descriptions" (p. 289). Considering that in the meantime, many more theories of psi have been proposed, it is clear that there is no shortage of theories of NLC.

In the following, I review and analyze a selection of non-physicalist theories that have been put forward from the beginning of the 20th century to date, grouping them into different categories according to some key features. Because they often overlap, I hasten to add that this classification and grouping of theories could have been rendered in other ways as well. But I am confident that for the purpose of the

present review, this classification is opportune. These are the categories of theories of NLC I discuss below:

- Psychological theories of NLC
- Field theories of NLC
- Hyperdimensional theories of NLC
- Minimalistic theories of NLC
- Theories concerning the role of the brain in NLC
- Non-minimalistic theories of NLC based on quantum physics
- Theories of NLC implying "synchronicity"
- Miscellaneous recent theories of NLC

5.2 Psychological Theories of NLC

Introduction

In the wake of somnambulism and German Romanticism, "the unconscious" of the human psyche became a prominent topic of interest in the Western world for the first time, particularly in Germany. Opening his seminal work *Psyche* from 1846, renowned polymath and painter Carl Gustav Carus (1789–1869) stated:

> "The key to understanding the conscious life of the soul lies in the realm of the unconscious."

Many authors who contributed to "discovering" the unconscious in the 19th century had a profound interest in NLC phenomena and pointed out the relationship between the two. In addition to Carus himself, who wrote an entire book on animal magnetism and "magic" (Carus, 1857), authors with an interest in NLC include Schelling, Schopenhauer, Fechner, and von Hartmann. However, the important role that NLC phenomena played in early studies of the unconscious in the West is barely mentioned in historical studies of its development (for example, see Liebscher & Nicholls, 2010).

Du Prel also shared this interest in the unconscious, attributing it to the transcendental subject. Exemplifying his reasoning about the constant unconscious access of the transcendental subject to NLC, he referred to the "daimonion" of Socrates, an inner "precognitive" voice that guided Socrates throughout his life. Du Prel wrote:

> "The transcendental subject has different wishes and different goals than the earthly person. It cannot therefore be assumed that the guidance of a daimonion should always be for the good of the earthly person, whose well-being only matters to the extent that it corresponds to the well-being of the transcendental subject.
>
> Even if the various forms of the daimonion can only be recognized in those cases where the transcendental influence crosses the threshold of sensitivity, the possibility must nevertheless be admitted that a transcendental influence guides or restrains us in many cases in which it is too weak to become conscious, but still acts as an unconscious will. If this were true, the transcendental subject would be, to an individually-varying degree, the director of our life drama, as it were, but its activity would not usually come to our awareness, only becoming conscious in exceptional cases as a goading or inhibiting daimonion." (du Prel, 1888b, pp. 161f)

Du Prel argued that this largely unconscious transcendental influence guiding our lives can also be found in dreams.

> "In our dreams we find ourselves in certain environments and in certain relationships with other people – relationships which we do not recognize as our own creation, although they are. Our self-consciousness in dreams extends only to our dreaming ego. But the actions of this ego, just as in life, are partly facilitated by external circumstances, partly forced upon us against our will; they consist of a compromise between our will and the circumstances. […] Accordingly, the course of our dreams, like the course of

> our lives, is uniformly and purposefully guided by a director standing in the unconscious background of our being, the transcendental subject, but of course not for the benefit of our earthly person." (du Prel, 1888b, pp. 162f)

Considerations like these anticipated later thoughts regarding the unconscious that led to the development of psychoanalysis in the 20th century. Its founder, Sigmund Freud (1856–1939), paid much attention to unnoticed dynamics of the unconscious that would counteract interests of the waking self and thus cause psychological problems. Because one goal of psychoanalysis consists in raising such unrecognized dynamics of the unconscious into conscious awareness, Freud noted that psychoanalysis might also help to understand ostensible telepathic influences better. He reasoned that a telepathic message reaching a sleeper would affect a dream in much the same way as other unconsciously-received stimuli, and that analyzing dreams might help in understanding the processing of telepathy. Like many, Freud thought that emotional content might be more effectively transmitted.[14] Probably the most famous disciple of Freud, Carl Gustav Jung, devoted much of his career to musing about NLC phenomena. I will return to Jung in the section on theories of NLC that rely on modes of causation other than efficient causation.

I will next mention another influential psychologist and parapsychological theorist, Jule Eisenbud (1908–1999). He is best known for his work with Ted Serios, a psychic who was apparently capable to produce fascinating images on Polaroid films by exerting a psychical influence on them (Eisenbud, 2021). What is less

[14] Several other psychologists have paid particular attention to telepathy in dreams. Other than in shared dreams, the "sender" of the telepathic message is usually not participating in the same dream as the receiver from a first-person perspective. The "sender" can be wide awake, undergo a critical health crisis, or even be dying, and the dreamers incorporate what the "sender" experiences into their dreams. Veridical dreams about severe crises of others, usually loved ones, are known as a variant of what has been called "crisis telepathy" or "crisis impressions." Several examples of telepathic dreams reported by psychologists have been collected in a recommendable volume by (Devereux, 1974). Experimentally-induced telepathic dreams have been studied extensively in the 1970s and 1980s, for a review see Sherwood & Roe (2013).

known is that Eisenbud was an astute contributor to parapsychological theory as well. He assigned psi a goal-serving function. But these goals are

> "not those of the individual at all but of an ascending hierarchy of interrelated systems in which the individual is merely a messenger of sorts." (Eisenbud, 1970, p. 337)

Rao summarized some illustrative points of Eisenbud's reasoning about NLC as follows:

> "Eisenbud argued that psi is elusive not so much because it is an unconscious function as because the goals it subserves are not in consciousness. Like the unconscious dynamic factors that go into the determination of our behavior, psi factors also may influence our behavior, whether or not we are able to discern such an influence. Thus, for Eisenbud, psi is a 'thorough-going part of the total behavior of the individual.' Eisenbud's emphasis on the goal-orientation of psi and his notion of 'psi-mediated intercommunication' have been a powerful influence on a number of parapsychologists, not only in their theoretical orientation but also in the interpretation of experimental results." (Rao, 1978, p. 267f)

Rex Stanford's theory of "PMIR"

Among these authors was psychologist Rex Stanford (1938–2022). He first proposed his theory of "psi mediated instrumental response" (PMIR) in 1974 and refined it in subsequent publications (Stanford, 1990). The name of this model "refers to response made possible by psi that is instrumental in the fulfillment of some need or the expression of some personal disposition" of an organism (Stanford, 2013, p. 353). A useful synopsis of PMIR can be found in Stanford's last publication about his theory (2015). Although Stanford did not address macro-PK in his later publications, it is for the most part included in PMIR (Stanford, 1974).

Generally speaking, PMIR proposes psychological processes through which psi might serve individual needs without the individual being aware of it.

One of the merits of PMIR is that it sought to link spontaneous psi in everyday life with laboratory experiments to elucidate its psychological underpinnings and modes of functioning. Especially in his 1990 publication, Stanford discussed a wide variety of details, implications, and possible experimental tests that would help refining this model. He furthermore addressed factors that would facilitate and inhibit PMIR. However, Stanford made it clear that PMIR is a purely psychological model of psi as it serves the needs and dispositions of the organism, making no assumptions or speculations regarding what it may be that allows psi to serve the organism in this way (Stanford, 2015). It presupposes the existence of psi and NLC, and examines in detail how it may function in psychological terms rather than expounding a theory of NLC. It therefore fully allows for combination with various other concepts, isms, and ontologies.

Jim Carpenter's "First Sight Theory"

Pretty much the same applies to an even more elaborated theory that shares many similarities with PMIR, the First Sight Theory (FST) developed by psychologist Jim Carpenter (Carpenter, 2012). As a psychological theory, FST attempts to account for "what psi means, how it works, and how it fits in with all the rest of what we currently know about our psychological functioning" (Carpenter, 2015, p. 244). The reference to "first sight" characterizes the view "that psi is a process that is ordinary, common, and crucially important, in fact, that it is something we use all the time in a way that precedes our every thought and action. It comes first" (ibid.). FST builds on two basic premises.

> "The first premise proposes a virtually unlimited unconscious mind. The second says that unconscious cognitive processing stands behind and produces all experience and behavior, and that this processing includes an

> extrasomatic reference to a wide world apprehended by what we call psi." (ibid.).

In his comprehensive book on FST, Carpenter (2012) discussed some precursors of his theory, including the PMIR. He describes congruencies as well as differences between PMIR and FST, in particular issues in which FST goes further than PMIR. This might be considered a crucial point:

> "First Sight theory accepts and builds on PMIR by sharing the assumptions that psi engagements may be expressed physiologically and behaviorally and never become conscious as such, and that needs and intentions are important in determining how psi is expressed. It extends beyond these assumptions in many ways. For one thing, it shows that psi is ongoing not just when these expressions are present but also when they are not. It also goes further by asserting that expressions of psi are *always* essentially implicit and inadvertent from the perspective of consciousness. […] It shares with PMIR the assumption that psi in the laboratory and psi in "real life" can be understood in identical terms, and it goes beyond that to assert that psi is also active in those countless instances in which no obvious expression of it is found in either place. […] First Sight shows how psi can be seen as acting all the time, functioning as a ubiquitous substrate in all human experience and volition." (Carpenter, 2012, p. 112)

In the postulate that psi is active all the time and serves as a fundamental base of cognition and action, readers might find similarities with the theories of Hans Driesch as well as Thouless and Wiesner, introduced earlier in this section. These authors maintained that even PK plays a constant unconscious role in everyday life by being involved in affecting the nervous system, for example when one intends to move an arm. This is also implied in FST: "the most basic function of PK is affecting the nervous system processes that carry out actions" (Carpenter, 2012, p. 93).

Still, as highlighted earlier by du Prel, the process of utilizing psi on a subconscious level might not be always in line with the conscious intentions and needs of organisms in order to help shaping their volitional decisions. Carpenter seems to share the notion that the unconscious might well have a different agenda than the ego, for example, when he suggests that macro-PK as in poltergeist cases can be the result of strong unconscious intentions to achieve a goal that are mentally blocked from becoming conscious. It then takes the form of "unconsciously expressive behavior" (Carpenter, 2012, p. 95).

Comments

Among psychological theories of NLC, Carpenter's FST represents the most elaborated one. In his book, Carpenter covered a wide range of topics for which FST might be relevant, for example memory, creativity, fear of psi, experimenter effects, and decline effects. Moreover, like other psychological theories, FST is compatible with a variety of other concepts, isms, and ontologies (see also Carpenter, 2015). Rather than being incorrect if some of the theories to be discussed in the following sections are correct, FST can serve as a frame concerned with the "how" of NLC functioning from a psychological perspective whereas other theories are more concerned with the "how" of NLC functioning from the perspective of natural sciences.

However, according to Carpenter, there exist some conceptual differences between FST and other theories. One difference important to Carpenter is that FST is not a "filter model," according to which the brain filters relevant data out of a vast incoming flood of information, including information gained via NLC. From the perspective of FST, the permanent unconscious processing of stimuli does not block perceptions, knowledge, or even memories from entering our awareness. By contrast: It precedes, assists, and enables our conscious experience of the environment. Therefore, Carpenter prefers to consider these unconscious

processes that bring perceptions to our awareness by utilizing psi a *bridge* to consciousness rather than a *filter* (Carpenter, 2012).

But perhaps both views are correct. As I will show later, we actually do need a filter system of some sort that ensures, for example, that we are not constantly flooded with memories, as are those with the condition called "hyperthymesia." At the same time, several other authors have emphasized that the filter metaphor is not appropriate in the context in which it is usually invoked (Atmanspacher, 2021; Kelly, 2015), noting that the brain and its senses do not merely filter or block potentially distracting content, but virtually create certain kinds of personal experience.

Personally, I like the metaphor of a lens: It is a tool that allows us to focus, zoom in, enhance, and intensify the engagement with our environment in ways that would not be possible otherwise, regarding all kinds of perceiving, feeling, and thinking. Our ability to experience similar perceptual and mental modalities of existence in other states of consciousness, such as dreams, OBEs, and NDEs, might merely be a result of this physically-mediated priming of our mind – and perhaps enabling this manner of experiencing is the precise reason for our physical existence. For the sake of simplicity and historical continuity, however, I will continue to use the filter metaphor for the brain and the senses in the following.

Overall, however, the arguments of Carpenter and numerous other parapsychologists make it seem reasonable to assume that whenever our unconscious is processing external or internal stimuli, psi is involved. Psi might be a perfectly natural feature of the subconscious aspect of our mind. The involvement of NLC in cognition might well be the default mode of organismic functioning when it comes to translating and incorporating externally-received electro-physical stimuli into first-person subjective experience. The postulated "virtually unlimited unconscious mind" that mediates NLC can in fact be seen as an expression for the arcane nexus.

The gist of this section

- Psychological theories of NLC are relatively neutral regarding the nature of NLC and its precise mode of causal efficacy. They are therefore compatible with a wide spectrum of isms and other theories of NLC.
- The most developed psychological theory of NLC is Carpenter's First Sight Theory (FST)

5.3 Field Theories of NLC

Introduction

Field theories of NLC have a long tradition, especially since psi was associated with electromagnetism in early physicalist theories. However, numerous successful experiments on ESP have been performed in which the "receiver" was shielded in a metallic closure, ruling out the possibility that electromagnetic fields might be involved in ESP. Hence, later field theories of NLC rely primarily on *non-physical* fields.

The concept of potentially non-physical fields has been discussed in biology since about a century ago, chiefly as a result of the work of Hans Driesch, a leading experimental biologist at the time. As mentioned previously, he took up the Aristotelian concept of "entelechy" as a formative principle that governs the growth of organisms in a holistic manner. It was a crucial element in the vitalist theory of biology that he elaborated upon and popularized in numerous writings.

Soon, however, other authors such as Alexander Gurwitsch (1874–1954) and Paul Weiss (1898–1989) argued that the supposed mode of functioning of the entelechy of an organism could be better framed using the concept of a field. Accordingly, they introduced terms such as "morphogenetic field" and "embryonal field" into

developmental biology. Driesch usually rejected the term "field" for describing the formative and organizational principle of organisms. He maintained that one could at best use the term "field" if one simultaneously emphasized the fundamental differences that exist between physical processes governed by physical fields and processes in organisms (Driesch, 1941).

However, the differences between biological field concepts and the non-spatial entelechy might not be as profound as Driesch thought. For example, he argued that entelechy would not only govern morphological processes but also behavioural aspects of organisms. In this context, he also called entelechy the "psychoid." In essence, Driesch maintained that the principle that organizes the natural growth of a body tissue is the same as that organizing the growth of a blister under hypnotic suggestion in response to a mental stimulus. As Carpenter would much later, Driesch furthermore argued that the movement of an arm is governed by an aspect of the same principle, and even PK effects are a result of this principle. For him, entelechy is a multifunctional, mind-related principle of organization. Overall, his concept represents a philosophically elaborated version of older notions of the soul.

In fact, Driesch maintained in his major work on parapsychology that the mental connection between individuals demonstrates that human beings are not isolated but embedded into a common non-spatial, transpersonal direct nexus in the ontic domain. He called it a non-spatial "soul field" and insisted that all theories of NLC must rely on such a connection between individuals in one way or another (Driesch, 1933).[15] Hence, there seems to be a relationship between the non-spatial soul-like entelechy and the non-spatial soul field that connects individual souls or entelechies.

[15] Driesch's book on parapsychology was first published in German in 1932 and then translated into English by Theodore Besterman. In this book (Driesch, 1933), Besterman translated Driesch's German term *Seelenfeld* as "mental field", but "soul field" seems more accurate.

As reviewed by Rao (1978) in the context of field theories of psi, a similar idea has been put forward by another important contributor to parapsychology, psychology professor Gardner Murphy (1895–1979). He stressed that NLC phenomena be facilitated by an interpersonal factor that transcends time and space. He argued that this interpersonal connection had much in common with field theories in physics, and proposed a non-physical "field theory" for NLC (Murphy, 1945).

The concept of "field" was also used by philosopher Henry H. Price (1899–1984) to characterize fundamental properties of NLC. He thought that the unconscious parts of individual minds may interact with each other via a collective unconscious since they share a "field of interaction" that connects all seemingly-isolated individuals (Price, 1940). Probably the most influential German parapsychologist, and founder of the Institute for Frontier Areas of Psychology and Mental Health in Freiburg, Hans Bender (1907–1991), endorsed Driesch's concept of soul fields and invoked a non-spatial "psychic field" or "affective field" to emphasize the emotional component that is often involved in NLC (Bender, 1972).

William G. Roll's "psi fields"

However, all these authors merely made use of the term "field" in a general sense and did not build a specific theory of NLC on fields. They used the term rather as a metaphor or analogy, either for characterizing a property of the arcane nexus in the ontic domain (soul field, field of interaction) or as a principle that facilitates NLC phenomena in the epistemic domain (affective field).

An author who proposed a more distinct theory in which fields are regarded as distinct entities was William G. Roll (1926–2012), an influential investigator of poltergeist cases. Referring to previous authors who used field concepts, Roll used the term "psi field", defining it rather generally as "the region in space in which psi phenomena are detectable" (Roll, 1964, p. 47). These psi fields, he argued, can produce representations of themselves in physical fields. In this way, they can

interact with each other and mediate the exchange of information between entities including organisms. The more the entities resemble each other, the more likely they are to interact. Similarly, the shorter the distance is between psi fields, the greater is the probability of interaction between them, meaning that psi is attenuated with distance.

Among parapsychologists, the proposition that psi or NLC diminishes with distance is only rarely found. Roll (1964) cited several sources that seem to point to such a spatial relation, but on the whole, there seems to be a considerable consensus among parapsychologists that spatial distance does not matter for NLC phenomena, in particular for ESP. In fact, Roll described later how he himself observed phenomena in the context of a poltergeist case he investigated that conflicted with his proposition (Roll, 1974). In contrast to what would be expected, psychokinetically-moved objects travelled greater distances when farther away from the focus person, compared to objects closer to this person. Roll then suggested that this discrepancy could be accounted for by the premise that psi fields rotate around the focus persons of poltergeist cases, similar to whirlpools. Because the angular velocity in such "vortex fields" is higher farther away from the center, objects farther away from the center travel faster and for longer distances compared to objects closer to the center. Based on the data he collected, Roll suggested that these psi fields chiefly rotate clockwise (Roll, 1974). However, his ideas were met with criticism within the parapsychological community and he was unable to convince many colleagues of his theory's merits.

Rupert Sheldrake's "morphic fields"

The best-known theory of NLC that relies on fields is the theory of "morphic fields" proposed by biologist Rupert Sheldrake. Although Sheldrake uses the concept of morphic fields to explain phenomena of NLC, like Driesch's entelechy, they have their origins in considerations regarding the physical organization of

organisms. In this biological context, Sheldrake has taken up the earlier concept of morphogenetic fields again. However, he regards them only as a subset, relevant in developmental biology, of the much larger family of morphic fields.

Sheldrake sees morphic fields as a new type of fields that has both a spatial and a temporal holistic aspect. They belong to every type and level of material organization, from the formation of crystals to the growth of living beings – but instincts, social behavior and mental processes are also said to be coordinated by corresponding morphic fields.

Sheldrake furthermore posits that morphic fields connect animals or people to places of specific emotional significance, such as their homes. They also connect individuals to each other, such as dogs and their owners, mothers and their babies, or lovers. In this sense, they represent a feature of NLC. If a dog moves away from a beloved owner or home, this field stretches like a rubber band between the two. If a child is in distress, the parents might sense it because of the connection mediated by a morphic field. In such cases of clairvoyance and telepathy, this type of morphic field is fostered by emotional bonds, connecting the partners in the interaction and provides a means through which information can be transmitted. These proposals are experimentally testable, and results obtained by Sheldrake and others strongly confirm this notion (Sheldrake, 2011, 2013, 2015).

Like Roll's psi fields, Sheldrake's morphic fields represent a decidedly externalist concept of NLC. Like Roll, Sheldrake suggests that the spheres of influence of an organism do not stop at their biological boundary, but can extend into space. This aspect of morphic fields can also be tested. For example, Sheldrake proposed that the morphological aspect of these fields might persist as the "phantom limbs" that are frequently felt to be present by those who have lost a limb. Preliminary tests seem to confirm this hypothesis (Sheldrake, 2002). They also appear to confirm the hypotheses of earlier authors such as Carl du Prel, who suggested that phantom limbs could still be perceptible by sensitive persons since they might comprise remains of the subtle bodies of organisms. Similarly, morphic fields might extend

beyond the body as a result of intention. In a prolonged series of experiments, Sheldrake and other researchers tested the degree to which people can sense they are being stared at from behind. Again, the results obtained are overwhelmingly positive, suggesting that not only the staring itself but also the direction of its origin can be detected (Sheldrake & Smart, 2023).

Comments

According to Sheldrake, another important characteristic of morphic fields is that their effect is strengthened by repetition. The more often a certain pattern or process is repeated, the more it stabilizes. Similar patterns or processes enter into an increasingly stable state of "morphic resonance." In his publications, Sheldrake compiled a huge amount of data that *prima facie* supports the notion that certain phenomena in nature become more and more stable the more they are repeated. Examples include natural "constants" (which might not be constant at all), chemical reactions, behaviors of organisms, and mental contents or "memes." Experimental tests, however, have so far yielded no evidence that would confirm the effects of morphic resonance (Vernon et al., 2021).

At any rate, if one thing is certain about NLC phenomena, it is that they are comparably rare, unpredictable, and elusive – anything but stable. Most lines of experimental parapsychology are plagued with a considerable replication problem (though this replication problem applies to other scientific research disciplines as well). Granted, according to numerous authors, eliciting NLC phenomena can be trained to some extent. Still, apart from a small number of gifted subjects, it seems that the degree of stabilizing and increasing the occurrence of NLC phenomena is overall limited in individual lives. Furthermore, it is questionable that NLC phenomena have become more common and stable in the course of the last centuries and millennia among the general population, even though taken as a whole, each generation experienced NLC phenomena over and over again.

Of course, many factors influence the occurrence and interpretation of NLC phenomena, as well as the extent to which they are reported to others. But overall, NLC phenomena might simply not be a suitable field of research for supporting the hypothesis that morphic fields become increasingly stable and reliable with repetition. It may also be that morphic fields can only be stabilized up to a certain maximum, which has been reached with NLC. But even in this case, experimental setups to further test the hypothesis of morphic resonance in the context of NLC would be difficult to design.

Overall, Sheldrake has amassed an enormous amount of experimental data that confirm the existence of morphic fields that mediate NLC, but results that would confirm the existence of morphic resonance remain comparatively weak.

So far, it seems that a more specific partial hypothesis regarding field theories cannot be confirmed. This applies to Roll's hypotheses that psi fields become decidedly weaker with distance and that they rotate, and to Sheldrake's hypothesis that morphic fields become increasingly stable via morphic resonance. If this is indeed the case, Roll's psi fields and Sheldrake's morphic fields remain on the level of other more general concepts of fields, and thus it remains difficult to establish whether they are substantially different from earlier externalist concepts such as subtle energies in Asian esoteric traditions or in spiritualism, or from other more general concepts of soul fields, psychic fields, affective fields, or fields of interaction.

In some respects, field terminology in the context of NLC appears to merely serve as a placeholder or a metaphor borrowed from physics used to indicate that something can influence something else at a distance – but it does not offer a deeper understanding or explanation. This is confirmed in the fact that field theories of NLC usually do not include elaborated mathematical formulas that allow them to be connected to existing physical theories, or that describe regularities, suggestions for measuring the supposed field's strength, etc.

Despite this, non-physical field concepts including morphic fields can for the most part encompass ESP including shared dreams, CORT, and macro-PK, but it is clear that such fields need to rely strongly on a mind-related feature in bringing phenomena such as shared dreams or macro-PK about. Non-physical fields are compatible with NDEs, but not really relevant in these contexts. Moreover, rather general concepts of non-physical fields including morphic fields do not imply particular views about the ontic domain except for excluding physicalism. They can be embedded in objective idealism, hybrid monisms, and substance dualism, and are furthermore compatible with dual-aspect monism, relative dualism, panpsychism, vitalism, and holism.

In some ways, non-physical field theories of NLC are therefore similarly general as psychological theories of NLC. They also provide no deeper explanation regarding the question how non-physical fields can have effects on matter. Hence, they offer a conceptual frame rather than an explanation of how NLC phenomena do occur. In this, however, they are similar to field theories in physics where, for instance, we can invoke electromagnetic fields to describe typical effects on matter mediated by them, but without understanding why electromagnetism exists and what it is.

Interlude: The problem of causation in field theories

At this point, it might be useful to consider the point that no one knows what a "physical field" actually is and how it causally affects matter. We only know that it mediates contactless effects at a distance. But no one can yet explain the true nature of gravity or electromagnetic fields, let alone why they exist at all. On the epistemic level, the *effects* of gravity and electromagnetism can be observed reliably; they are effects mediated by what we consider to be primordial "natural forces." But we have no clue regarding the ontic nature of natural forces such as electromagnetism – similar to the potential non-physical fields mediating NLC.

Just as we can observe how a magnet reacts to the presence of another magnet, we can observe how one identical twin may react telepathically to what the other twin experiences. The main difference between these two processes is that we can repeat the first phenomenon as often as we wish, and even deduce mathematical formulas to describe and predict what happens, whereas this doesn't work with biological organisms and NLC.

But, you may object, there is another important difference between these processes: In the first case, the behavior of the two magnets provides comprehensible evidence for efficient causation in physical systems. If you bring the positive poles of these magnets towards each other, they will repel and move away from each other, a clear case of cause and effect. Nothing comparable happens with the brain physiology of telepathic twins. We cannot identify a cause that can affect another mind from a distance and thereby affect the latter's brain physiology. Therefore, one might argue along with Reber & Alcock (2019) that NLC phenomena such as telepathy cannot exist in a "mechanistic" world.

This, however, is a gross misunderstanding of what really happens when physical objects such as magnets or billiard balls are moved, and this is the point that must be made. The situation becomes much trickier if we remind ourselves of a crucial physical fact:

Matter is not made of matter.

When I introduced the philosophical position of neutral monism earlier in this essay, I mentioned that physical objects such as the chair you are sitting on do actually not exist in the way we perceive them. They are composed of atoms, and atoms are composed of very unusual non-material structures such as quantum fields and waves of probabilities. Even if we regard matter to consist of subatomic particles such as protons and electrons, these particles can only form atoms and molecules because they are held together by immaterial electromagnetic fields. But

again, we have no idea why a negatively charged electron is attracted by a positively charged proton, and why two positively charged protons repel each other, or why they are charged at all. We can only observe that it is that way.

The same applies to the two magnets. We have no idea why two positively charged poles of magnets repel each other. Hence, we can also not explain how a field, an immaterial entity, can affect matter. Where and how exactly does a field "touch" matter and move it? More: Where exactly does one billiard ball "touch" the surface of another billiard ball and move it? Already Eduard von Hartmann (1907a) stressed that in reality, no one ever touched anything directly. Touching a solid material surface is an illusion because, on the microscopic scale, clear-cut material surfaces of objects do not exist.

When you touch the right leg of your chair with your right index finger, the finger never touched the chair's leg directly. Rather, electromagnetic fields that hold particles together in the shape of a "material" finger in mostly empty space meet repelling electromagnetic fields that form what you perceive as the "matter" constituting a leg of a chair, in mostly empty space. Strange as it seems, the only reason you cannot plunge your finger into the chair's leg is that your finger's molecules are repelled by electromagnetic fields of the chair's molecules.

Again, how immaterial fields can attract or repel each other, and move chunks of structures that we perceive as matter through space, is essentially unexplained. There is an explanatory gap regarding causality. It is comparable to what is often called the "hard problem of consciousness", i.e. how physical processes in brain matter can give rise to subjective conscious experience (Chalmers, 1995). For greater precision, the hard problem of consciousness should actually be worded thus:

> How can the immaterial fields and waves of probability that we perceive as a brain give rise to immaterial subjective conscious experience?

Although putting the problem this way makes it seem less hard, we do not know how consciousness arises from these fields, just as we do not know how consciousness can affect them, as apparently happens in telepathy and PK – and according to interactionist versions of dualism, even in our own head and brain. Only because we are so used to dealing with matter, electromagnetism, and gravity do we barely notice that we actually dealing with profound mysteries. It is therefore useful to remember that concepts and terms such as "natural forces" and "fields" do not describe objective reality. The same applies to the concept and term of "dimensions", including the idea of time being a "dimension." In physics, these terms are mere placeholders and metaphors used to characterize observable regularities on the epistemic level. They provide no deeper explanations for understanding what it is that we perceive. Hence, the explanatory gap of how immaterial fields can affect matter in field theories of NLC is just the same as that existing in physics.

This is why from the perspective of field theories of NLC, the main difference between physical field phenomena and spatial NLC phenomena (telepathy, clairvoyance, and PK) is that the former can be repeated regularly and without problem and the latter cannot. But this difference is not as large as it may seem at first.

The gist of this section

- Field theories of NLC provide rather general frameworks for making sense of NLC. They do usually not comprise mathematical elaborations that render them compatible with other existing theories.
- Similar to psychological theories of NLC, they are relatively neutral regarding the nature of NLC and its precise mode of causal efficacy. They are therefore applicable to a wide spectrum of isms and other theories of NLC.

- The best known theory of non-physical fields that can for the most part account for NLC is the theory of morphic fields by Rupert Sheldrake.
- There is currently no known process that explains how non-physical fields mediating NLC can have effects on matter. On closer examination, however, theories of non-physical fields fare no worse in this respect than theories of physical fields because the same problem exists in physics as well.

5.4 Hyperdimensional Theories of NLC

Introduction

When I introduced Carl du Prel's thoughts on NLC, I noted that he endorsed the hyperdimensional theory of NLC advanced by astrophysicist Karl Friedrich Zöllner. Subsequently, numerous other authors endorsed hyperdimensional models as well, both in physics and parapsychology. Astronomer and mathematician Bernard Carr provided a concise review of such theories (Carr, 2015).

Among philosophers interested in NLC, Henry H. Price sympathized not only with the idea of "interactional fields" but also with a hyperdimensional model of reality (Price, 1953). He proposed that the mental realm in with we perceive our environment and other experiential states such as dreaming and NLC represent an ontologically different realm than that constituting our four-dimensional physical environment. In our personal experience, these realms intersect. Hornell Hart (1953) explicitly invoked shared dreams, i.e. intersecting four-dimensional dream-spaces of different dreamers, to develop a theory of a "psychic fifth dimension." He suggested that experiences made in this "inner world" of five-dimensional space may have varying degrees of reality (Hart, 1965). A prominent author advocating a related higher-dimensional theory of NLC was neuropsychiatrist John R. Smythies (1922–2019). Beginning in 1951, he reworked and refined his thoughts on how a hyperdimensional approach might provide a suitable frame for comprehending

NLC, publishing his final work on this subject more than six decades later (Smythies, 2012).

Bernhard Carr's hyperdimensional theory

These days, Carr is an influential proponent of hyperspatial models for NLC. He corresponded with Smythies for nearly 40 years and noted that their models almost converge (Carr, 2015). Similar to Price's, their models build on the distinction between the "physical space", the three-dimensional space of objects in time, and the "phenomenal space", the mental inner realm by which we experience the world. This phenomenal space is afforded equal status to the physical space and thus represents a fifth dimension. Overall, the four-dimensional physical spacetime and the phenomenal space represent two different slices of a single holistic five-dimensional psychophysical spacetime. Consciousness is an intrinsic part of the universe. In this way, it is possible to conceive occurrences in which time is transcended (retrocognition, precognition) and in which space is transcended (telepathy, clairvoyance, PK) because they are mediated via this higher-dimensional consciousness-related structure (Carr, 2015). This might in particular apply to ostensible apport phenomena and for NDEs after which the experiencers described their visions if they had had full 360°-vision, had perceived objects from all sides simultaneously, etc. (Brumblay, 2003; Jourdan, 2011; Rousseau, 2015).

In his publications, Carr stressed that this supposition is not as outlandish as it may seem. In fact, many widely discussed theories of modern physics include additional dimensions. Usually, however, these dimensions are thought to be "compacted" in subatomic spaces, and therefore do not play a perceptible role in our environment.

Carr argues that his model might be compatible with a prominent physical theory known as "M-theory", an encompassing version of superstring hypotheses. Speculating further, he suggests that there might indeed be more than five extended dimensions, resulting in a hierarchy of reality structures of increasing

dimensionality. This might finally lead to a "Universal Structure" that can be interpreted as an informational space with the different levels of dimensionality specifying the accessible information content. On high levels, deep mystical experiences would be possible. In order to understand how different elements in the Universal Structure interact, Carr aims at formulating a "Transcendental Field Theory." This is because he assumes that these interactions proceed via fields that are more extensive than known physical fields in that they do not involve only space and time (Carr, 2015).

In sum, the basic ideas of Smythies and Carr, and especially the latter's elaborated theory, point out that it is for the most part possible to connect modern theories of physics to theories of NLC – provided that physics is extended to include a fundamental consciousness-related feature. It also shows that hyperdimensional models need not be seen as an alternative to field theories but can include or even imply them. Accordingly, Carr holds the notion that Sheldrake's concept of morphic fields is quite compatible with his own theory (Carr in Ruickbie, 2021).

Burkhard Heim's hyperdimensional theory

Likewise, German theoretical physicist Burkhard Heim (1925–2001) favored a hyperdimensional model of reality. He was probably the first physicist to develop an elaborated mathematical theory of higher dimensions that are not compacted to subatomic scales, and therefore have tangible large-scale effects in our environment (Auerbach & von Ludwiger, 1992; von Ludwiger, 2021). It entails six dimensions. In addition to the three spatial dimensions and time, the 5^{th} and 6^{th} dimensions are essentially qualitative. They comprise organizational properties and orchestrate the structuring of matter. Heim called the fifth dimension the "entelechial" dimension since it effects the organization of our world and in particular that of organisms. He maintained that without such an organizational feature of the world counteracting entropy, organisms could not exist – much less consciousness. Also

in Heim's theory, these added higher dimensions are increasingly mind-related. Because they transcend ordinary spacetime, they furthermore allow for the entire spectrum of NLC phenomena. An advantage of Heim's theory which sets it apart from other contemporary hyperdimensional models that can account for NLC phenomena, is that some aspects of it are empirically testable:

- Heim's contains formulae for calculations of the mass of many elementary particles (Heim, 1980a). When they were programmed and analyzed by particle physicists at the German Electron Synchrotron DESY in 1981, they were found to yield astonishingly accurate results (von Ludwiger, 2021).
- Other physical parameters that can currently only be measured but not calculated or deduced from other parameters in contemporary physics, for example the value of Sommerfeld's fine structure constant, can likewise be calculated using Heim's theory (Auerbach & von Ludwiger, 1992).
- Because of certain biophysical considerations, Heim predicted that molecules of DNA would emit coherent photons. This has been confirmed by the discovery of biophotons (Heim, 1980b).
- Heim's theory contains testable proposals regarding the creation of gravitational fields, but testing has not yet been undertaken (Grüner, 2009; Heim, 1980a).

Moreover, according to astrophysicist Illobrand von Ludwiger (1937–2023) (1998), Heim's theory can be extrapolated to understand the peculiar behavior of UFOs or "UAP" (for "unidentified anomalous phenomena, as they are currently called by many).[16] Their seemingly inexplicable modes of appearance and disappearance, acceleration, and abrupt changes in flight direction have much in common with phenomena of macro-PK. This suggests a common *modus operandi*, which is relevant for theory building in both areas (Nahm, 2023b). Von Ludwiger suggested that

[16] I am aware that UAPs are a highly controversial topic. Yet, I maintain that the existence of "unidentified anomalous phenomena" in our skies cannot be denied any longer – no matter what their true nature might be.

NLC phenomena as well as the behavior of UAPs can be explained by their utilization of the hypothesized higher-dimensional structures of reality. Because Heim's model is well elaborated in mathematical terms, has implications for many aspects of physics, biology, consciousness studies, NLC and even UAPs, and includes numerous testable features, it provides a promising pathway for further exploration. In addition, von Ludwiger stressed that it would be compatible with field theories of NLC such as morphic fields (Ludwiger, 2012).

Another recent hyperdimensional model that accounts for NLC phenomena and has been elaborated in many technical and mathematical details is the "Triadic Dimensional Distinction Vortical Paradigm" by neuropsychiatrist Vernon Neppe and physicist Edward R. Close (2012). It builds on nine dimensions, namely three dimensions of space, time, and what the co-authors originally called "C-substrate" (consciousness-substrate). Later, they replaced this term with "gimmel" (Neppe & Close, 2020). According to Carr (2015) as well as Neppe and Close (2012), their two theories share several basic features. The gimmel-dimension(s) in the latters' theory seem to share the role of Heim's 5^{th} and 6^{th} dimensions in that the gimmel "has organizing effects on the matter and energy of all the universe" (Neppe, 2023, p. 375). It is organizing consciousness (ibid., p. 399). And, like Carr and von Ludwiger, Neppe and Close (2012) pointed to several compatibilities between their theory and Sheldrake's theory of morphic fields.

Comments

In comparison to the previously-discussed psychological theories and field theories of NLC, hyperdimensional models of reality exist in fairly detailed mathematical forms. The theory by Heim especially is well elaborated in mathematical terms. However, his theory was not developed to make sense of NLC; it only follows naturally from his theory as a byproduct. Moreover, the mathematics and logic

Heim used to describe processes involving the higher mind-related dimensions are difficult to understand. Nevertheless, I mentioned already that there are several ways in which his theory can be tested empirically. But, are there ways in which hyperdimensional models can be tested with regard to NLC phenomena?

Friedrich Zöllner held the opinion that phenomena of macro-PK, such as the transport of objects into and out of a closed space (apport and deport phenomena) would provide solid evidence for a hyperdimensional structure of reality. Hans Bender, who postulated "psychic" or "affective" fields, also sympathized with a hyperdimensional model of reality in order to account for NLC. He stressed that noted physicist Ernst Mach (1838–1916) considered the potential appearance and disappearance as the best evidence for higher dimensional model of space as well (Bender, 1972).

Granted, I am aware of another notion according to which apports can be explained by very unusual properties of the quantum realm within a three-dimensional space. In this model, the quantum realm is conceived to function as a kind of "tunnel" that links different locations in our epistemic space – but this is precisely what the hypothetical fourth dimension of space is conceived to be. If we return to Flatland for a moment, and think of it as lying on the book page, when you fold this page in such a manner that two points of it touch each other, they provide a tunnel (or a bridge, if you like) that links two points in Flatland-space via a fold in a higher dimension. In this sense, it seems difficult to avoid any hint of higher dimensions if it is established that objects really can disappear from one location in space and reappear at another location.

Several theorists of NLC agree that hyperdimensional models of reality or NLC are compatible with field theories of NLC. This might be due to a similar situation to that concerning apports: In a case of spatially separate identical twins sharing a telepathic experience, we can invoke a psychic field or a morphic field that links the twins or creates "tunnels" in the space between them. But we can also conceive of this link as being mediated via a higher dimension. These possibilities do not

exclude each other but can in fact complement each other. This is especially so because field concepts are rather general and merely describe that one entity has a distant effect on another entity in our epistemic domain. Hyperdimensional theories go deeper. They are more concerned with possibilities to describe the ontic domain of nature. Hence, speaking very broadly, one might invoke

1) a field theory to describe an "effect at a distance" (such as telepathy) between entities that appear spatially separated on the epistemic level, or

2) a hyperdimensional model in which these entities are not separated in the same manner on the ontic level.

Which option we chose might chiefly be a matter of the level of description we are concerned with, and both forms of description can be true simultaneously.[17]

Because hyperdimensional theories are developed in more detail and address the ontic domain, they can be regarded as an overarching frame for field theories of NLC. They are also more encompassing. For example, they provide a better frame for understanding apport phenomena. Invoking non-physical fields alone is barely sufficient to explain how a physical object can disappear at one location in space and reappear in another. Moreover, hyperdimensional models in which the higher dimensions are conceived to be increasingly mind-related can account for NDEs. These higher dimensions constitute the realm from which the epistemic phenomena originate. When the threshold of sensitivity is appropriately lowered, a conscious self might be able to experience these higher realms, by gaining 360-degree vision, for example, or by mystical experiences. These higher dimensions constitute the arcane nexus in which individual beings are rooted and linked. They can even account for shared dreams.

[17] In fact, fields such as electromagnetic fields have long been integrated into hyperdimensional models in mainstream physics already, for example in superstring theories.

This fundamental root in a non-local mind-related background reality can furthermore enable the functional mode of psi as proposed in psychological theories of NLC such as the First Sight Theory.

Regarding suitable philosophical frames, hyperdimensional models of NLC are rather flexible. Like many other theories of NLC, they are only incompatible with physicalism. But specifically in the theories of Carr, Heim, and Neppe and Close, mind or consciousness associated with the higher dimensions is regarded as the fundamental constituent of the universe. These theories are therefore compatible with objective idealism and hybrid monisms, but not with substance dualism. They furthermore have panpsychist and holistic features. These theories agree that life and human consciousness cannot be reduced to physical processes governing inanimate matter. Life is typically seen as being informed and structured by organizational properties of the higher dimensions. Therefore, these theories imply vitalism. They also allow for discrepancies between cognitive and brain physiological functions as well as for personal postmortem survival after the decomposition of the brain as in CORT. They therefore entail relative dualism on the epistemic level (for an example, see Rousseau, 2015).

But of course, the merits of higher dimensional theories of NLC hinge on how they can be expressed in mathematical terms and the degree to which they can be utilized in practice. Burkhard Heim's theory provides a quite complete approach covering many important aspects of contemporary physics, and it will be very interesting to see how well Bernard Carr can link his envisaged "Transcendental Field Theory" to M-theory.

Overall, hyperdimensional theories of NLC provide encompassing theories in order to make sense of NLC. However, in the writings about hyperdimensional theories, I have so far not discovered an explicit attempt to explain what happens on the level of the mind/brain interface, or what happens when the mind exerts a psychokinetic influence on matter. I turn to such attempts in the next section.

The gist of this section

- Hyperdimensional theories of NLC can account for all decisive NLC phenomena: NDEs, CORT, shared dreams, and macro-PK.
- Some hyperdimensional theories of NLC are fairly well-developed mathematically
- They can serve as an overarching frame for field theories of NLC
- They are compatible with psychological theories of NLC
- They are based on idealism or idealism-slanted hybrid monism and imply relative dualism

5.5 Minimalistic Theories of NLC

Soon after the puzzling findings of quantum physics became known, some biologists (Bertalanffy, 1927; Meyer, 1934) and physicists (Jordan, 1932) argued that they would disprove mechanistic models of biological function that rely on principles of classical physics, and the fact that the observation of processes on the quantum level influenced their outcome would render the concept of causal determinism obsolete in organisms. On these grounds, Pascual Jordan (1902–1980), one of the most influential physicists of the 20th century, developed the foundations of what he called "quantum biology," starting in the 1940s (Jordan, 1941). He argued that by means of appropriate physiological "amplifier" processes, events on the quantum scale could be upscaled in organisms and result in effects on the macroscopic scale, thus resulting in processes that could not occur in a purely mechanistic and deterministic model of biology.

In the 1970s, the significance of observation for the outcome of quantum events found its way into parapsychological theorizing as well. One example is provided by a related set of models known as "observational theories."

Observational theories

Observational theories (OTs) were developed in the context of experiments in which subjects attempted to psychically influence series of random events, for example the output of quantum-based random event generators (REGs). These electronic devices produce random sequences of numbers based on the events involved in radioactive decay processes. In general, the aim of such experiments is to produce sequences that deviate from ordinary randomness (e.g., Schmidt, 1975; Walker, 1975).

The rationale of OTs rests upon the supposition that quantum mechanical events are not determined before they are observed. Prior to observation, quantum mechanical systems exist in states in which different events are possible. In the words of quantum physicist Werner Heisenberg (1901–1976), who used terms drawn from the philosophy of Aristotle to describe this process, the act of observation turns one of these "potentialities" into an "actuality," a concrete event.[18] Therefore, an output sequence of random events from a REG is still in an indeterminate state until it is inspected, i.e. observed. This allows subjects to influence this output when they "observe" it. Even when the output of the quantum REG has already been recorded in the past, it can allegedly still be influenced via retroactive PK as long as has not yet been observed. The following postulates are essential in OTs:

[18] Another pioneering quantum physicist, Erwin Schrödinger (1887–1961), approached this topic from a different angle. In his approach and terminology, the indeterminate "'wave function" of a quantum physical system "collapses" into a concrete state due to a measurement. In this essay, I will adhere to Heisenberg's terminology.

- All statistically significant deviations from the norm detected in the REG output are the result of PK.
- These deviations are created retroactively when the test persons (or other subjects) receive feedback regarding their performance. This feedback is mandatory for the occurrence of psi because it is the crucial act of "observation" that causes such anomalies.

These postulates result in tenets that are quite peculiar for minds used to thinking in logical and temporal terms. Usually, we assume that events that happened in the past cannot be influenced by present activities. Consider paleontologists who dig through a layer of sediment that contains fossils in the hope to find more fossils: We assume that the fossil record in these sediments has existed for a very long time and is not created by the paleontologists the moment they see the fossils.

Accordingly, several authors including philosopher Stephen C. Braude (2002) argued that the basic construct of OTs represents a circular closed loop that factually contradicts itself: In essence, the observation of an event that has already been recorded in the past (the REG output) influences the recording of itself in the present. As argued by Braude, the PK effort therefore both *presupposes* and *causes* the earlier recording in the past – a logical contradiction.

In defense, proponents of OTs have argued that this paradox only applies to the epistemic domain but not the ontic domain in which time, space, and familiar modes of causation do not exist. In fact, OTs exclusively apply to small-scale REG-output sequences, not to macroscopic processes such as the fossilization of dinosaur bones.

Obviously, OTs are comparably minimalistic and parsimonious with regard to the basic assumptions they are built upon and the NLC phenomena covered. They are therefore connectible to mainstream physical theories, in particular quantum

physics. This is clearly their strength, but at the same time, it is a weakness from the perspective of developing encompassing theories of NLC.

OTs cannot account for macro-PK such as poltergeist phenomena, apports, or metal bending. Similarly, it seems difficult to explain shared dreams, out-of-body experiences with veridical perceptions of the physical environment, CORT, and other spontaneous NLC phenomena from everyday life via OTs.

Nevertheless, several other theories have spun off from OTs, and they still have something in common with OTs: They rely on only one form of psi. In that, they are as minimalistic as OTs. Moreover, most of them do not take the full spectrum of NLC phenomena into account. They usually focus on laboratory experiments on psi and disregard, for example, CORT and macro-PK. It is nevertheless worthwhile to briefly discuss some of these theories.

Other minimalistic theories of NLC

One of these minimalistic theories of NLC is the "decision augmentation theory" (DAT; May, 2015). In contrast to reducing all REG anomalies to effects of PK as in OTs, all NLC phenomena are reduced to precognition in DAT. This theory does not rely on the effects of observation on quantum processes, but it is elaborated in considerable mathematical detail and some of its corollaries allow for empirical testing. So far, some of them could not be confirmed and other aspects were discussed controversially (Schmidt, 2015). Be that as it may, DAT also does not account for macro-PK and other large-scale spontaneous NLC phenomena, and thus is not an encompassing theory of NLC either.

Subsequently, ideas originating in DAT were developed further into the more complex "Multiphasic Model of Precognition," later renamed the "Multiphasic Model of Informational Psi" (MMIΨ; Marwaha & May, 2019). This theory still relies on the assumption that precognition is the only existing form of psi. Hence, all NLC phenomena must either be attributed to direct precognition of future

events – or, in cases of retrocognition of events that have already occurred, to precognition of information concerning these past events that will become available again in the future. However, the peculiar tenet that retrocognition of past events is actually precognition of future feedback about these past events entails a similar paradoxical causal loop as that of OTs: In some scenarios, the precognitive effort of the experiencer both *presupposes* and *causes* what happens at present (Nahm, 2019a). But because quantum mechanical processes in response to observation play no role in the MMIΨ, their unusual properties cannot be invoked as a remedy for this dilemma.

Moreover, the MMIΨ constitutes a physicalist theory of NLC and requires the premise that "informational psi" must be loaded onto physical energy carriers such as hypothetical gravity waves to be able to propagate backwards in time. Apart from the fact that such gravity waves have never proved to exist, this model faces the numerous problems associated with all physical wave models for NLC (Nahm, 2019a). And although it can supposedly account for many spontaneous NLC phenomena, it again cannot account for macro-PK.

Moreover, Edwin May and Joseph Depp (2015) embedded the MMIΨ in a hyperdimensional model, thus demonstrating the general attractiveness of hyperdimensional concepts for theories of NLC. According to May and Depp, time as we know it does not exist in the hyperdimensional space, but "all events that have happened, are happening, or will ever happen in our spacetime exist simultaneously." In this hyperdimensional space, wormholes are assumed to function as shortcuts that connect "*any* two points in spacetime regardless as to where they are in that four-dimensional space" (May & Depp, 2015, p. 141; emphasis in the original). This means that these wormholes are able to mediate the flow of informational psi between all possible points in the past, present, and future spacetime. But in this case, retrocognition, clairvoyance, and telepathy would likewise be possible. Precognition can only be regarded as one type of manifestation of ESP, just like in other models of NLC.

The MMIΨ therefore has several difficulties as a theory of NLC. Nevertheless, it contains interesting features that are worthy of future investigation. These include the supposition that the amount of entropy generated in a given situation might exert a decisive effect on the success of a precognition experiment. I can imagine this might be the case, and would thus encourage further studies.

Another recent and quite parsimonious theory of NLC was developed by physicist Dick Bierman (2015). According to him, it is entirely based on contemporary physics and requires no extra assumptions at all. "Consciousness induced restoration of time symmetry" (CIRTS) builds on the fact that most physical formalisms such as electromagnetic theories and their equations are inherently time-symmetric. One solution of a given equation describes processes that develop with time, whereas the other solution describes processes that travel backwards in time. Bierman advanced considerations about how this principle might be relevant for the brain as it sustains consciousness, and how it might allow for anomalous cognition such as ESP. CIRTS might therefore have theoretical merits, especially since it includes testable partial assumptions. However, Bierman (2015) admitted that his model can barely handle PK. I doubt it can account for shared dreams or the many facets of CORT including replacement reincarnation.

Comments

This short summary of what I called "minimalistic theories of NLC" shows that a number of these theories address only parts of the encompassing spectrum of NLC phenomena. Proponents of these theories are usually aware of this. But they either do not take large-scale NLC phenomena such as macro-PK as givens, or they aim at proceeding step-by-step in the development of theories of NLC, beginning with a small step that appears connectible to contemporary physics.

Some proponents of minimalistic theories of NLC might become dissatisfied with their own approach and work to refine it. In his most recent publication, Evan H.

Walker (1935–2006), one of the pioneering developers of OTs, proposes a much more all-encompassing theory of NLC. After reviewing quantum physical findings and implications, Walker states, for example:

> "All of these discoveries have shown, little by little, that consciousness is a fundamental part of reality. The quantum mechanical description of a world of state vectors with state selection caused by observation moves us still closer to seeing the observer as co-participator […] in all physical phenomena." (Walker, 2000, p. 177)

He conceives the mind to consist of two parts: Consciousness and will, the will being the means that links consciousness to the brain. More:

> "What we are saying is that this will channel causes the events in the brain and those in the external world to go hand in hand with what happens in our consciousness. We are saying that our mind can affect matter – even other brains – and that distant matter and minds can have an effect on us." (ibid, p. 265)

Walker obviously is not reducing NLC phenomena to retroactive PK anymore. He goes on to say:

> "If we assume only that conscious observation exists, that alone is enough to let us understand where space-time and matter come from. There is no space as such, no matter as such. There exists only the observer, consciously experiencing his or her complement. And in doing so, the observer weaves the illusion of space-time, and matter falls like snow from the conscious loops of the mind." (ibid., 2000, p. 308)

In essence, OTs are dualistic theories because the observing mind causes the transition from quantum potentialities to an actuality in the physical domain. Still, Walker finally advocated a "dualistic idealism" (ibid., 309). This is a very apt formulation for an objective idealism concerning the ontic level combined with relative dualism on the epistemic level.

Concerning the relationship between consciousness and the brain, Walker posits that an interaction of consciousness and brain takes place at the level of the synapses, the parts of the neurons in the brain that link them together. Here, quantum-mechanical electron tunneling mediates the influence of the will (Walker, 2000). Such a theory of mind-brain interaction was advanced earlier by neurophysiologist and Nobel laureate Sir John C. Eccles (1903–1997).

These considerations lead me now to an overview of theories on the role of the brain in NLC phenomena. Or, put more provocatively: Is the brain really necessary for experiencing NLC?

The gist of this section

- In several theories of NLC, their developers attempt to explain NLC phenomena via either PK or precognition alone, or via comparatively-simple processes known from physics.
- Although these "minimalistic" theories of NLC seem compatible with aspects of contemporary physics, they cannot account for all NLC phenomena in question, in particular macro-PK.
- When trying to make sense of NLC phenomena and their implications for the world at large, at least some proponents of minimalistic theories of NLC have advanced much more far-ranging considerations.
- Minimalistic theories of NLC do not constitute a suitable framework for understanding NLC as a whole. Certain aspects of them are nevertheless well worthy of further study.

5.6 Theories Concerning the Role of the Brain in NLC

Introduction

As mentioned, Evan H. Walker suggested that the mind exerts some kind of influence on synapses in the brain by means of quantum mechanical processes. This idea was advanced already in 1953 by John Eccles. Similar to Pascual Jordan, Eccles posited that quantum effects on molecules at the synapses spread rapidly across neuronal networks in a kind of amplifier system and reach macroscopic relevance, thus mediating the mind-brain liaison. Eccles furthermore speculated that such an influence of the mind might likewise account for PK and ESP, and he expressed his sympathy for the hyperdimensional model developed by John Smythies. Eccles maintained that a synthesis of his model and that of Smythies would be possible, thus acknowledging the connectivity of their approaches (Eccles, 1953).

Eccles' interest in parapsychology persisted in the following decades. He even conceived the influence of the will on neuronal processes as an example of psychokinesis (1977), though he never developed a theory of NLC in more detail. He did present a more-detailed model of possible quantum processes at the synapses mediating the interplay of the mind and the brain (Beck & Eccles, 1992). Eccles' approach represented one of the first explicit attempts to make the processes of mental causation in the human brain understandable from a dualist and neuroscientific view. It has been picked up and elaborated further by other authors interested in potential mind-brain interactions (Atmanspacher, 2024b).

However, one may wonder: to what degree can the assumed influence of the mind on the synapses play a role when the brain's functions are severely impaired but consciousness endures, or is even considerably enhanced, as it is in NDEs after cardiac arrest (Holden, 2009; Rivas et al., 2023)? How is it possible that the brains of people undergoing such NDEs can even establish long-term memories of these

experiences, given that they were essentially non-functional during the time of the NDE?[19]

If the postulated quantum physical processes do take place at the synapses of the brain as suggested by Eccles and Walker, this can happen only when the mind-brain relationship is functioning in a healthy and normal manner. It is therefore time to look at the larger picture of brain conditions under which it is possible to be consciously aware.

Because there are no real theories of NLC wholly focused on the mind/brain relationship, the structure of this subchapter differs from the others in Chapter Five. Instead of introducing and discussing particular theories, I will rather describe more general considerations and hypotheses that have been advanced by authors in the field. The relationship between mind and brain is of crucial importance for many theories of NLC and their philosophical frames. It therefore deserves a thorough assessment.

Historical perspective

Especially in the context of NLC phenomena, members of many different traditions and cultures are convinced that the physical body, including its brain, limits our access to reality at large. When I introduced core elements of Carl du Prel's philosophy in Chapter Four, I pointed out already that many authors and researchers of NLC phenomena share the notion that the brain does not produce consciousness but rather filters, transmits, or canalizes cognizable mental content.

In the West, such concepts can be traced to antiquity (du Prel, 1888b; Grosso, 2015). They became particularly prominent the wake of somnambulism. For

[19] It is sometimes claimed that NDEs in patients with cardiac arrest might be retroactively created during the time the brain is recovering from its non-functional state rather than during the time of apparent unconsciousness. This supposition is questioned by several lines of arguments, however (Nahm & Weibel, 2020).

example, physician and polymath Johann H. Jung-Stilling (1780–1817) argued in 1808 that the brain and the five senses constitute the restricting means by which we cognize our familiar environment in terms of time and space, but the soul can disentangle from its immersion in the physical body to different degrees. In lower states of disentanglement, the soul experiences imaginative and hallucinatory elements due to the ongoing influences of the physical body; in the highest degree of disentanglement from the brain, such as very deep states of somnambulistic trance and the point of death, clairvoyant abilities and the experience of the spiritual realm become most pronounced and concepts of time and space no longer apply (Jung-Stilling, 1987/1808).

An influential author of the German Romanticism movement who covered many of these topics in his writings was Gotthilf Heinrich Schubert (1780–1860). Below, I quote passages from one of his later works. They are representative of a stream of similar publications released in the first half of the 19th century and epitomize notions about what happens in near-death states. Schubert's ideas are already very similar to contemporary notions about what are now termed near-death experiences. Schubert was familiar with well-established elements of NDEs such as out-of-body experiences, life reviews, meeting deceased loved ones, the ineffability of these experiences, and the deep, unforgettable imprint they leave in the minds of experiencers. Note that the reference to a bird flying through space in comparison to a walking terrestrial animal in the passage below also bears a distinct hyperdimensional connotation.

> "The soul, as soon as it has become more or less free from the body and is following its own mode of function, has a different way of perceiving and cognizing than through the sense organs, and a different way of acting than through the nerves and muscles. […] The cognizing soul, like the soaring bird, surveys simultaneously and all at once the entire sequence of sensations and actions which it would experience slowly and gradually in the normal waking state. Therefore, in a case [of] clairvoyance which occurred shortly before

> death, the whole life, with all its rich experiences and twists, with its thousandfold actions, was surveyed in spiritual superimposition and at lightning speed. […] After the soul has taken this peculiar flight of clairvoyance, the usual course of memory can no more follow its tracks than a four-legged animal can follow the flight of a bird." (Schubert, 1850, vol. 2, p. 46f)
>
> "In several cases, the soul found itself during the period of apparent death in a state of rapture and of being translocated to a native region, for which the measure of time and the dividing wall of the separating space of our earthly world no longer exist, because the spirit turned homeward had tasted the bliss as well as the fear- and shiver-inducing powers of an entire eternity. Many retained a homesickness for this upper place of their brief sojourn, which could not be soothed by any pleasure of later life in the flesh, nor extinguished by any pain on earth." (Schubert, 1850, vol. 1, p. 438)

Later authors refined these views. For example, French philosopher and Nobel laureate Henri Bergson (1859–1941) presented his view on this matter in detail in a frequently-quoted presidential address for the *Society for Psychical Research* held in 1913 (Bergson, 1914). Along with Hans Driesch, Bergson is often regarded as the most important proponent of vitalism at the beginning of the 19th century, and, like Driesch, he maintained a dualist position regarding the relationship of mind and brain.

Bergson argued that the sensory organs in cooperation with the brain represent a limiting means of canalization that protects organisms from constantly-incoming floods of information, which would otherwise make leading a structured life impossible. The brain is chiefly responsible for coordinating movement and actions. This filter system usually also blocks ESP. Imagine what kind of life it would be if the fox always knew where the rabbit was, and the rabbit always knew where the fox was! – or, if everyone could read everyone else's thoughts and know

everyone else's past and potential future! Life as we know it, including its evolution, would very likely be impossible.

Similarly, Bergson argued that memories are not stored inside the brain. Rather, its function consists of providing access to memories that are appropriate and useful in given situations. Without this filtering function, we would have permanent access to all our memories, and such a condition would hinder our coping with the present and planning for the future. Only in certain circumstances, such as in NDEs, do the usual mechanisms of memory regulation break down and full access to our memories become possible.

Recent research on people with exceptional memory abilities seems to confirm this notion. People with superior autobiographical memory, or "hyperthymesia", depict their condition as problematic. This is how a woman described her condition to a physician she consulted for help:

> "My memory has ruled my life […] I want to know why I remember everything. I think about the past all the time… . It's like a running movie that never stops. It's like a split screen. […] Whenever I see a date flash on the television (or anywhere else for that matter) I automatically go back to that day and remember where I was, what I was doing, what day it fell on and on and on and on and on. It is non-stop, uncontrollable and totally exhausting. […] Most have called it a gift but I call it a burden. I run my entire life through my head every day and it drives me crazy!!!" (Parker et al., 2006, p. 35)

The authors of the study from which this quote is drawn stressed that this kind of superior memory does not provide advantages for other aspects of everyday life, such as trying to learn something. Indeed, the woman quoted felt troubled because she spent much of her time recollecting the past instead of orienting to the present and the future – just as Bergson anticipated. In such contexts, it seems justifiable to

adopt a filter metaphor for the brain's functioning despite the criticism advanced by James Carpenter and others.

The enigma of memory: Is it a feature of NLC?

Naturally, a great deal of resources and efforts have been spent already on elucidating the anatomical and physiological aspects of the brain involved in memory processing. But it is safe to state that despite the enormous amount of detailed knowledge amassed in recent decades, the fundamental questions remain unanswered: How and where in the brain are memories stored? Is it possible at all to store a conscious experience in a biophysical code, tag it, and retrieve it when appropriate?

I won't go further here but will refer to critical literature on these topics from a philosophical and a physiological perspective (Braude, 2006; Gauld, 2007). The point I wish to make is that from very early on, NLC phenomena and memory have often been considered closely-related phenomena. Some authors who thought that memories are not stored in the brain suggested that memory is actually not too different from retrocognition, and likened it to a particular form of retrocognition, namely "psychometry." In psychometry, people in physical contact with an object can glean accurate knowledge about the object's history or details concerning the life of the object's owner (Barrington, 2023; Roll, 2004).

Driesch (1935), for example, speculated that the brain in essence is a highly complex "psychometrised object of rapport" that allows us to be in contact with our own past by retrieving memories from a non-physical realm of existence, such as the "world consciousness" proposed by William James. Driesch stressed that his considerations were very preliminary, but he saw three lines of evidence supporting his notion:

1) Physical memory traces cannot be localized in the brain. Moreover, memory defects resulting from severe brain lesions are often restored after a

certain time. This would be in line with psychometry, in which the information about the past associated with a material object, say, a watch, cannot be stored via localized material traces or changes in the object itself. Accordingly, it is of subordinate relevance whether parts of psychometrised objects are damaged or not. The information about the past can still be retrieved.

2) The faculty of remembering is often greatly enhanced in hypnotic states. Similarly, the psychometrical faculty of sensitive persons is greatly enhanced in states of trance.

3) Memories are particularly pronounced when they carry emotional content. Similarly, residues of the history of an object gleaned by a sensitive individual often concern events in which emotions played a pronounced role.

Driesch suggested further that if memories are not stored in the brain and the brain is chiefly an object for psychometry like an inanimate object such as a watch, the anatomical structures of the brain cannot play a decisive role in this process of psychometry, or memory. Like Bergson, he argued that the brain and nerves rather serve to interconnect the body and enable coordinated movement and action.

In fact, a number of findings question the proposition that certain anatomical brain structures must be in place and intact to make memory possible. Take, for example, people with extreme hydrocephalus. In this condition, the brain of fetuses and babies cannot develop normally because cerebrospinal fluid accumulates inside the skull and cannot be drained, resulting in an extremely deformed brain; in some cases, there is only a thin layer of cortical tissue on the inside of the skull and other important structures of healthy brains cannot even be detected.

Accordingly, most people with such a condition are severely handicapped – but not always. Neurologist John Lorber (1915–1996) documented many of these unusual cases, including the astonishing example of a student of mathematics who had only a very thin layer of brain tissue on the inside of his skull but had a verbal IQ of 144!

His genius-level intelligence suggests a very good memory as well. Regarding such cases, Lorber liked to pose the question (with a twinkle in his eye), "Is your brain really necessary?" (Lewin, 1980; Lorber, 1983). Similar cases continue to be reported (Alders et al., 2018; Feuillet et al., 2007; Masdeu et al., 2009).

Another fascinating memory-related finding is reported from cases of hemispherectomy. In these drastic operations, an entire brain hemisphere is either removed entirely or functionally disconnected from the rest of the brain, as the last option to save a person's life. The astonishing finding is that such patients' memories are virtually unaffected. Some physicians say no memory is lost at all. If memory is stored in physical traces in the brain, this is surely not what is to be expected, especially considering that much smaller lesions can cause massive memory loss. If memories are not stored in the brain, they might still exist in such cases, and only the access to them has become non-functional. If so, removal of the damaged area might enable psychometric access and processing of these memories again.

In fact it has been known for a long time that removal of larger brain parts can sometimes be more beneficial for patients with brain conditions than the removal of smaller brain parts (McFie, 1961), an observation sometimes called "paradoxical improvement" (Welch & Penfield, 1950). As a consequence, it might be possible that people with grave memory deficits might regain access to their memories again through removal of the entire hemisphere that contains the damaged area rather than removing the damaged area alone (for an overview on these issues, see Nahm et al., 2017).

Further support for the notion that memory might not be stored in the brain, and therefore represents a type of NLC phenomenon, is provided by cases of "paradoxical lucidity" (Mashour et al., 2019). In these cases, largely unresponsive or even comatose people with massive neurological brain damage due to strokes, tumors, Alzheimer's disease or other conditions, can suddenly become lucid and coherent again for a period of time. Often, such episodes of unexpected

paradoxical lucidity occur shortly before death, presenting paradoxical "terminal lucidity" (Nahm, 2009, 2012b, 2022a; Nahm et al., 2012). In drastic cases, people who have been unresponsive for years due to irreversible neurological degeneration of their brains, who no longer even recognize their own children, can suddenly become mentally clear, coherent, able to recognize people and remember their own lives again, etc. – then die shortly afterward. How are these people's mental capacities, including their memories, suddenly restored despite the brain damage that rendered them unresponsive for months or years? Frequently, such episodes are accompanied by near-death visions in which the patents perceive deceased loved ones, spiritual figures or glimpses of a transcendental spiritual realm (Nahm, 2012b).

The list of phenomena that challenges the premise that memories are stored in the brain can be extended further, for example, by savants such as Kim Peek (1951–2009), who had a virtually perfect memory. In contrast to people with hyperthymesia, whose exceptional memory faculties pertain to autobiographical memory, Peek was apparently able to remember everything he had read or heard, even if only once, in his lifetime. It is estimated that toward the end of his life, he knew the texts of about 12,000 books verbatim, including the Bible. Interestingly, his brain displayed gross aberrations from the normal development, with some parts missing entirely (Treffert, 2010; Treffert & Christensen, 2005).

At the same time, very tiny organisms display remarkable feats. In the 1930s, Friedrich Alverdes (1889–1952), a biologist who advocated a holistic notion of biology in an attempt to advance Driesch's vitalism, experimented with single-celled organisms, demonstrating that they possess the faculty of remembering. Experiments with *Paramecium* and other unicellular organisms showed that they remembered what had happened in previous trials and adapted their behavior accordingly (Alverdes, 1938). Replications by other researchers confirmed this finding. The authors of a recent review conclude that such studies

> "suggest that single cells have the ability to carry out a form of information processing that neuroscientists have traditionally attributed to networks of cells. We still do not understand how *Paramecia* accomplish this feat." (Gershman et al., 2021)

Paramecia and other single-celled organisms have no brains, nor even a single neuron (and synapse). So how can they remember anything at all? Biologists speculate that their memories must somehow be encoded in physical memory traces, just as is assumed to occur in the human brain. But in single-celled organisms, this must obviously entail different processes. Some speculate that their memories are encoded in certain macro-molecules, although no one knows at present how this might be accomplished. Thus, the supposition that biological organisms, or parts of them, may function as psychometric objects for memories not physically stored in them might not be that improbable.

It arguably finds further positive support by personality changes associated with organ transplants. There are numerous cases on record in which organ recipients seemed to acquire personality traits and memories from the organ donors (Braude, 2003; Carter et al., 2024). Granted, there are some speculations that this transfer of donor mental content might be due to a hypothetical "cellular memory" conveyed from one organism to another, perhaps by encoding experiences in the genome of tissue cells. But since it is entirely unknown how such memories could be physically stored and transmitted in these cells and then turned into mental experiences of human beings, this option does not appear to be very plausible – especially since we do not even know how memory is stored physically in the brain or even in single-celled organisms.

The empirical evidence for dualism

Even if the brain serves as a psychometric object or a filter for memory, brain activity must be relevant. The lowering of the threshold of sensitivity that enables

enhanced memory and NLC access, such as in deep hypnosis and trance, goes hand in hand with altered brain states and hence, altered brain physiology. For this reason, parapsychologists have speculated which brain parts or functions might be involved in experiencing NLC phenomena.

For example, Jan Ehrenwald (1900–1988), a psychologist with a deep interest in NLC and its theory, mused about which anatomical parts of the brain might be responsible for upholding the threshold that separates unconscious percepts including NLC phenomena from conscious experience. Referring to similarities between drawings by telepathically-gifted people and people with damage to cortical brain regions of the left hemisphere, Ehrenwald suggested that the right hemisphere is chiefly responsible for processing NLC. The filter system that usually blocks incoming psi impressions would consist of subcortical portions of the brain (Ehrenwald, 1978).

More recently, Morris Freedman and his team have provided new evidence supporting the hypothesis that certain areas of the brain can serve as a filter for NLC. These researchers showed that when cortical areas of the left hemisphere in healthy individuals were subjected to reversible brain lesions by applying "repetitive transcranial magnetic stimulation", they obtained a statistically significant "psi effect" in test trials. When the same areas of the right hemisphere were subjected to the similar reversible lesion, such an effect could not be detected (Freedman et al., 2024). These findings suggest that this area in the left cortex might play a role in the postulated NLC inhibition process. Should this be replicated, it offers fascinating new pathways for researching NLC access that could yield repeatable positive effects.

Activity reduction in left cortical regions of the brain might be only part of the picture, however. In a review of the pertinent literature, Edward F. Kelly and David Presti (2015) summarized the main factors that appear to facilitate NLC access from the psychological and neurobiological perspectives. A particularly important observation has been updated and briefly summarized by philosopher Bernardo

Kastrup (2019): Numerous lines of research suggest that experiences of NLC are correlated with an overall reduction or impairment of brain functions, not only in specific parts. Decreased activity at the neuronal synapses can obviously lead to enhanced mental experiences. In particular, as highlighted already by Jung-Stilling and strongly confirmed by decades of research on NDEs, experiences of NLC including life-changing mystical experiences often occur in near-death states when virtually the entire brain's function is severely compromised, for example after cardiac arrest (van Lommel, 2013). In such cases, filter processes of whatever kind must be severely compromised. Brain activity and mental experience are decoupled.

This is likewise the case in coma patients whose brains were demonstrated to be non-functional by brain scans and other tests, but who maintained after recovery that they had been lucidly aware throughout their comas, sometimes confirmed by their remembering every detail of conversations held at their bedsides (Nahm et al., submitted).

These findings are quite significant, as they empirically disprove the concept of the identity view, i.e. psychophysical parallelism, according to which brain states and mental experience are merely two epistemic aspects of a unitary third entity, like the two sides of a coin, as well as traditional versions of dual-aspect monism.

In fact, near-death phenomena in particular are experienced in a largely uniform manner under a wide range of brain conditions. Terminal lucidity including near-death visions is reported in indistinguishable terms both from people who died with healthy brains and people with severe brain damage resulting from strokes, tumors, and neurodegenerative-dementia (Nahm, 2012b). NDEs also, including out-of-body experiences, are reported in virtually identical terms despite resulting from a wide variety of brain conditions that range from extreme oxygen deprivation after cardiac arrest to optimal oxygen supply. When reading an account of an NDE without knowing its context, it is often impossible to draw any conclusions on the brain condition of the experiencer (Nahm & Weibel, 2020).

The most extreme examples demonstrating that states of mind and brain are not always correlated are provided by CORT. Here, young children insist they have lived before and can sometimes provide verifiable information about this previous life. There are more than 2,500 CORT on record, of which many have been thoroughly investigated (Nahm, 2023a). In these CORT, mental life and memory obviously persisted while the brain and body disintegrated. These children even sometimes provide verifiable details concerning events that happened during the intermission period between the death of the individuals whose lives they recall and birth into their current lives – a time in which their minds inhabited no body or brain whatsoever (Matlock, 2017a). The de-correlation of states of mind and matter cannot be any greater.

Astonishingly, in cases of replacement reincarnation, personal mental content including memories of a deceased individual "moves over" to the brain of a living person, thereby replacing the previous person's identity including their memories (Matlock, 2017b). For reasons unknown, the same memories can obviously be associated with different brains. Therefore, once one accepts the authenticity of at least one documented CORT, one must also accept that it provides unequivocal empirical evidence for the following important conclusion – regardless of the question whether CORT are interpreted in terms of postmortem survival or psi faculties of the living:

> Memory and other personality traits can persist without being coupled or correlated to specific anatomical structures of brains or organisms. Therefore, the relationship between mind and brain can only be interpreted in a dualist manner on the epistemic level – be it in terms of substance dualism or relative dualism. *Hence, any encompassing theory of NLC phenomena must imply substance dualism or relative dualism.*

Thus CORT and cases of replacement reincarnation refute not only traditional dual-aspect monism on empirical grounds, but also physicalism and epiphenomenalism. Moreover, if one accepts that CORT can best be interpreted in

terms of some form of individual postmortem survival (Nahm, 2023a), they lend considerable support to the notions of Indigenous peoples, many Asian esoteric traditions, and 19th-century theories of NLC (including that of Schubert) according to which an individual soul can survive bodily death.

Overall, the findings discussed in this section provide significant evidence for the notion that consciousness is not produced by the brain. But what about dreams? *If our waking consciousness is not produced by brain chemistry, we must assume that our consciousness in dreams, and presumably the entire dreamscape, is likewise not produced by brain chemistry.*

This conclusion is furthermore supported by the occurrence of shared dreams. Whatever dreams are, they obviously cannot be reduced to erratic outputs of nocturnal neuronal fireworks. This lends support to the concepts introduced in the section on hyperdimensional theories of NLC according to which mental realms such as dreamspace might represent "real" dimensions of (inter)subjective existence. This is not at all in conflict with the supposition that dreams are largely shaped by the dynamics of the individual unconscious or transcendental subject.

The phenomena discussed in this section highlight the need to take experiences into account that deviate from the normal when speculating about possible modes of mind-brain interaction. If it is really the case that the mind can reliably interact with the brain via microscopic quantum physical processes at the neuronal synapses as suggested by John Eccles, this at best only applies to situations where the mind interacts with a largely healthy brain.

Yet, as indicated by considerations advanced by Evan H. Walker, there are more radical theories of NLC that require drastic changes in our habitual notions about how the brain and the world function. They also build on quantum mechanical principles, but break more fundamentally with causal concepts typically dealt with

by natural scientists concerned with the epistemic domain. I turn to these theories of NLC in the next section.

The gist of this section

- Numerous lines of empirical research provide substantial evidence for the notion that the mind/brain relationship does not always adhere to psychophysical parallelism. They therefore disprove epiphenomenalism and traditional versions of dual-aspect monism.
- Some parts of the brain may play a role in hindering NLC experiences under normal circumstances.
- However, NLC experiences are also facilitated by an overall lowering of brain activity.
- NLC experiences and mystical experiences can even occur in near-death states when brain activity has in effect ceased.
- CORT including cases of replacement reincarnation provide strong empirical evidence for the persistence of personal memories and character traits even when the brain is no longer existent.
- Any encompassing theory of NLC must therefore include some form of substance dualism or relative dualism regarding the mind/brain relationship.

5.7 Non-Minimalistic Theories of NLC Based on Quantum Physics

Like many minimalistic theories of NLC, several of the non-minimalistic theories of NLC I will discuss build on important findings from quantum physics. This includes the already-mentioned concept from physicist Werner Heisenberg: The transition of a set of possible states (potentialities) on the quantum level to a

distinct state in which only one of these potential states is realized by the observation or measurement of these potentialities.

Henry P. Stapp's theory of "quantum interactive dualism"

An influential theory of NLC in which quantum potentialities play a decisive role has been developed by physicist Henry P. Stapp. It was originally concerned with quantum physical considerations and the relationship of mind and brain (Stapp, 2005). Later, Stapp applied his concept of "quantum interactive dualism" to NLC phenomena (Stapp, 2015). As the concept's name implies, it is similar to the theory of Eccles in that it entails quantum mechanical processes. But it is different in that does not rely on processes at the synapses of neurons on the microscopic dimension. Rather, the quantum mechanical transition of potentialities to actualities is posited to affect brain states on a much larger scale.

In Eccles' model, the mind affects the synapses of bunches of neurons and the resulting effect is then amplified to cause larger neuronal activities that, for example, govern action. But in Stapp's model, the entire brain is conceived as a quantum physical system that can be affected by the mind. His theory relies on two well-established phenomena of quantum physics. The first is the mentioned transition from potentialities to actualities by the act of observation, which, of course, is also the basic premise of the OTs.

The second pillar of Stapp's theory is a very peculiar quantum physical phenomenon, the "quantum Zeno effect." In essence, this effect describes the reaction of quantum systems to repeated observations that occur in very quick succession. Under the condition of such quickly-repeated observations, the state of a quantum system does *not* undergo the usual transition from potentialities to actuality. It is "frozen" and thus behaves differently than it would under the condition of a single act of observation, or of only a few observational acts at greater temporal intervals.

When we now consider the brain to be a system based on quantum mechanical processes, as Stapp insists we must do, then the act of fast-repeated observations can make the brain behave differently than it would under purely physical conditions or under conditions of only occasional observations. In this manner, one can influence when certain potentialities are realized but not others. The observer in this scenario is the intentional human mind, which unconsciously probes the quantum mechanical state of the brain repeatedly in quick succession, thus biasing the behavior of the brain's physiology in the direction of its intentions.

Stapp maintains that this process is not the same as traditional notions of psychokinesis as a mental force, as imagined for example by Joseph B. Rhine. Rather, by relying on the quantum Zeno effect, it would merely require acts of observation to be perfectly in line with orthodox quantum physics. Moreover, it provides a natural explanation of how the mind can cause changes in physical systems such as the brain without violating the law of conservation of energy. It therefore can also allow and account for human free will. Stapp's theory furthermore accounts for the obvious fact that brain states affect mental states as well, for example when taking drugs or being knocked out by a blow on the head (Stapp, 2011).

As mentioned, Stapp (2015) extended his model also to NLC phenomena. This is possible because the mind as the observing or probing agent can also direct its attention to other physical systems than its own nervous system. In this way, it can facilitate ESP. Similarly, just as this mental agent can affect the brain's physiology via the quantum Zeno effect, it can also affect other body tissues, especially when emotions and intentions run high, and cause physical changes such as hypnotic blisters or stigmata. Moreover, macro-PK as in poltergeist phenomena and levitations are for the most part possible in Stapp's theory, although he admitted that many details still have to be elaborated in this respect. However, his dualist model can easily account for survival phenomena such as CORT because the mind can survive the brain's demise. It can also attach to other brains as in cases of

replacement reincarnation, and displace the mind previously associated with this brain (Stapp, 2015).

Stapp emphasized that he does not regard his theory as fully developed. His aim was to indicate a possible direction in which quantum physics could be adapted to accommodate NLC phenomena and thus provide a rationally coherent theory of reality.

Stapp is skeptical of panpsychism, however. In his model of quantum interactive dualism and its foundation on the quantum Zeno effect, observations play the crucial role. But Stapp is not convinced that observers other than human beings can be regarded as true observers who can turn potentialities on the quantum level into factual occurrences (Stapp, 2011). In particular, he does not associate mind-like properties with inanimate matter. On the other hand, however, he has opined that the ontic domain of nature as a whole is essentially grounded in mind:

> "The quantum mechanical counterpart of the material classical state of the universe represents mere potentialities for future psycho-physical happenings. These potentialities are images of what the future perceptions might be. The state that carries them, like the potentialities they carry is evanescent: it is beset by quantum jumps that are linked to mental events. Hence the quantum state is more like "an idea" about something, which rapidly changes like an idea does, when new information becomes available, than like a material substance of classical mechanics that tends to endure.
>
> The foregoing summary leads to the conclusion that, in terms of its behavior, the ontological character of quantum reality is more mind-like than matter-like." (Stapp, 2017, p. 71)

Stapp agreed with physicist Max Planck, according to whom consciousness is fundamental and matter a derivate from consciousness. Pointing out that all of reality is made of "one single kind of stuff", Stapp endorsed the notion of a

universal mind, a non-local background reality within which our mental experiences are embedded and that links individuals to others.

In other words: In addition to "quantum interactive dualism" on the epistemic level, Stapp holds a monist position of objective idealism regarding the ontic foundation of existence. Like Walker's theory before, Stapp's theory of NLC therefore represents a prime example of an idealist theory implying relative dualism, even though he does not endorse panpsychism. Stapp's theory of NLC can still be framed in a theory that posits an arcane nexus of beings. The proposition that only human beings are able to influence quantum states via observation, and thus also mediate NLC, is questioned by the obvious display of NLC phenomena by animals (e.g., Sheldrake, 2011; see also Nahm, 2015).

Some related approaches

Stapp's theory can be regarded as paradigmatic for similar theories advanced by other authors. For example, theoretical biologist Stuart Kauffman and Dean Radin, Chief Scientist at the Institute of Noetic Sciences (IONS), have provided a related theory of NLC that is likewise based on the conversion of nonlocal "Possibles" into "Actuals" by using our will (Kauffman & Radin, 2023). In fact, we do this in our daily lives constantly. NLC phenomena therefore only represent a subset of quite normal and natural phenomena. Kauffman and Radin furthermore emphasized the increasing evidence for quantum effects in various functional contexts in organisms, including the functioning of the brain, and they pointed out the simultaneously increasing evidence that consciousness is found throughout the animal kingdom. The authors ultimately endorsed panpsychism, stating that mind may play a role in the becoming and evolution of the universe. In their publication, they covered only studies of NLC in laboratory experiments. But since Radin has endorsed macro-PK and other NLC phenomena from real life in other publications

(Radin, 2013, 2018), it can be assumed that their theory can also apply to NLC phenomena generally.

Similar thoughts have been advanced by independent researcher George Williams. He has proposed a theory that incorporates the Stappian concept of an interplay between potential and actual aspects of reality (Williams, 2013). Inspired by philosopher Bertrand A.W. Russell (1872–1970), Williams favors a neutral or merely phenomenological monism. He regards quantum potentialities as the ultimate basis, the ontologically prior nonlocal ground, of the world (Williams, 2021, 2023). Consciousness is rooted in this domain and therefore has (unconscious) access to potentialities that correspond to future states and spatially distant locations, enabling ESP. Similarly, mental intention might influence physical processes by influencing the potentialities that ground our world, enabling PK.

This presumes some degree of volition and true agency by which intentions can become manifest on the epistemic level. Williams suggests that instead of fixed universal laws, the regularities and stable relations we observe in our world are maintained by teleological "intentions" of a nonlocal, mind-like ground of potentiality. He sympathizes with cosmopsychism, the earlier-mentioned panpsychist notion according to which the entire universe is conscious. Like Kauffman and Radin, Williams has discussed only small-scale NLC phenomena reported from controlled experiments in his publications. Nevertheless, he maintains that his proposed framework "suggests some intriguing possibilities for our lived experience outside the lab" (Williams, 2023, p. 168).

David Bohm's theory of the implicate and explicate order

Interestingly, Williams explicitly included a higher-dimensional feature in his theory. He did so with reference to quantum physicist David Bohm (1917–1992), who had previously developed a theory of reality that likewise entails a stratum of quantum potentialities as the foundation of our familiar world. He famously termed the ontic

domain and the epistemic domain the "implicate order" and the "explicate order" respectively (Bohm, 1980). The nonlocal implicate order is conceived as an "enfolded" psychophysically neutral substrate from which the mental and the physical, including mind and body, unfold on the epistemic level as projections. Bohm furthermore conceived the implicate order as entailing a higher-dimensional structure with different levels of subtlety. Hence, he stated about the relationship of mind and body:

> "We do not say that mind and body causally affect each other, but rather that the movements of both are the outcome of related projections of a common higher-dimensional ground." (Bohm, 1980, p. 209)

Moreover, according to Bohm, his theory can account for the occurrence of NLC phenomena since the implicate order mediates the "nonlocal connection" between subjects and objects irrespective of space and perhaps time. He maintained that such a connection alone cannot be understood as a structure in three-dimensional space, but would necessitate a higher-dimensional approach. In the hyperdimensional implicate order, connections between entities can depend more on similarity or "resonance of meanings" than on locations in space (Bohm, 1986). In fact, meaning or "active information" plays a crucial role in Bohm's theory. It links what appear as mental and physical phenomena on the epistemic level, including mind and body, and it is the essence of the universe as a process. Like Kauffman, Radin, and Williams, Bohm endorsed a panpsychist notion on a neutral monist foundation.

Many levels, many worlds: The theory of Michael Whiteman

Polymath and mathematics professor Michael Whiteman (1906–2007) developed perhaps the most radical theory based on the quantum physical concept of potentialities and their actualization. He created a multi-level model of such potentialities and their actualizations in different levels of mainly non-physical

worlds. Whiteman's encompassing and far-reaching theory is based on a wealth of personal experiences. His diaries contain accounts of over 7,000 OBEs, psychic experiences, and mystical experiences (Poynton, 2011). Not surprisingly, he put much weight on personal experiences when theorizing about NLC.

Whiteman argued that OBEs in which the perceived physical environment contains elements that do not correspond to the actual circumstances should not be considered to be mere hallucinations. Rather, the experiencer has entered a different kind of non-physical realm. Likewise, dream states can be seen as a form of existence in a non-physical world. In these mental spheres, potentialities of a different kind from quantum potentialities are actualized by experiencers. Like Hornell Hart before him, Whiteman argued that mental experiences differ in their degree of reality. He therefore developed an index to determine the degree of reality in such experiences (Whiteman, 1975, 2006). Ordinary dreams are rated low in this respect; the more coherent experiences are, the higher they are rated. The generation of mental potentialities is influenced by subconscious elements of the individual and by being in "resonance" with other potentialities (Whiteman, 1973).

According to Whiteman, such resonances of potentialities in individuals also underpin NLC phenomena, for example, telepathic experiences between individuals. Factors such as emotions influence their potentialities. Moreover, space and time as we know it are not applicable in these mental realms. The causes of NLC phenomena can therefore not be found on the level of actualization of potentialities on the physical plane. Rather, we need to penetrate behind appearances to find causal substructures because they can never be found on the same level as objects and occurrences themselves, be they physical or non-physical.

Whiteman had expert knowledge of the mystical and esoteric literature of the West and East, and referred to it frequently in his work. John Poynton (2011, 2015) has given informative overviews of Whiteman's extensive and complex writings about the "many levels, many worlds" perspective of existence. Whiteman's work represents a unique blending of personal experiences of NLC, ancient esoteric

traditions based on idealism, core elements of quantum theory, and mathematical formalization.

Comments

In Whiteman's and Bohm's theories, the term "resonance" will strike a note among those who sympathize with Sheldrake's theory of morphic fields and morphic resonance. It therefore comes as no surprise that Bohm and Sheldrake found congruencies in their thinking (Sheldrake, 2009). In fact, although I grouped theories of NLC into specific categories according to some of their core features, it is obvious that congruencies between approaches pop up over and over again even in theories from different categories. For example, when discussing hyperdimensional models, I mentioned Heim, Carr, and Neppe and Close, who arrived at their hyperdimensional theories by quite different pathways than Bohm did – but all regarded their theories as compatible with Sheldrake's morphic fields. Similarly, Whiteman's concept of multiple non-physical realms resonates with Price's and Smythies' theories, according to which the mental realm including dreamspace can be regarded as a factual world or added dimension of existence. Accordingly, Poynton (2015) highlighted compatibilities of Whiteman's theory with that of Carr, while the latter referenced Whiteman's work (Carr, 2015). All of these authors furthermore endorsed the concept of the arcane nexus. Most of them also imply a dualism on the biological level, the mind/brain relationship. Only Bohm's theory is inconclusive in this respect, since he endorsed a dual-aspect notion that appears to imply psychophysical parallelism. But he did not address survival phenomena.

At any rate, the propositions of Bohm, Williams, and Whiteman highlight the possibility that theories based on quantum potentialities and their transition to actualities can include hyperdimensional elements or can at least be linked to them. This might be important because, with the exception of Bohm's dual-aspect

monism in which interaction between mind and brain does not occur, proponents of hyperdimensional theories have so far not explicitly addressed the relationship between mind and brain. In fact, Stapp criticized Bohm's view of consciousness as unsatisfactory (2011, 2017).

Vice versa, it remains unclear in the theories of Stapp and of Kauffman and Radin how macro-PK including apport phenomena can be accomplished in a three-dimensional space without admitting that this space can be tunneled on the quantum level. However, as already mentioned in the section on field theories of NLC, the assumption that space can be tunneled is virtually equivalent with the hypothesis of a higher dimension. After all, the concept and term of a "dimension" is merely a placeholder and metaphor that helps describe observable phenomena, just as the concept and term of a "field." All these concepts merely help to provide a frame of thought that ideally allows for developing mathematical and physical models of reality.

Seen in this light, hyperdimensional theories can enrich theories of NLC, building on quantum potentialities which have so far not been much concerned with macro-PK and apports, and the latter can enrich hyperdimensional theories which have so far not been much concerned with suggestions about how the mind can causally affect the brain. But of course, it takes physicists to gauge to what degree such a synthetic approach can be realized in detail.

Finally, none of the theories introduced in this section are embedded in a psychological context. They merely provide technical outlines of how the occurrence of NLC can be conceived from the perspective of natural science, particularly physics. Thus they are compatible with psychological theories of NLC, such as the First Sight Theory. Jim Carpenter (2012, p. 402) pointed out that FST can be congruent with neurophysiological models that account for NLC

phenomena. As shown by the following quotes, Henry Stapp's theory appears to fit the overall idea of the FST, although some details and formulations differ.[20]

> "To account for the ego's needed awareness of its physical situation it is reasonable to assume that this ego is scanning the potentialities represented by its brain, which has been responding to features of its environment via its various sense organs. […] The role of the observer is thus to choose, on the basis of his or her mentally felt reasons and values, what to attend to, and how effortfully to attend to it. These choices effectively select from the huge mass of existing potentialities a sequence of classically describable observations." (Stapp, 2025, p. 173)

The gist of this section

- Several theories of NLC relying on quantum potentialities and their transition to actualities can potentially account for all decisive NLC phenomena (NDEs, CORT, shared dreams, macro-PK).
- These theories usually imply a dualistic approach in that the mind can affect quantum states.
- Some of these theories contain hyperdimensional features, indicating that they can be linked to previously-discussed hyperdimensional theories of NLC.

[20] In FST, all experience is constituted by purposeful but unconscious processes utilizing multiple source of information, including psi information, according to one's contextual intentions. This process precedes conscious experience. In Stapp's model, conscious experience appears to be presupposed in that the "probing agent" i.e., the human mind or ego, turns potentialities into actualities according to its intentions. I was not able to discern in Stapp's publications to what degree this process can be seen as permanently ongoing – and most importantly, to what extent it operates on the unconscious level. When directly asked about it, Stapp unfortunately did not provide a clear answer (Stapp, 2011, p. 130ff).

- By contrast, the theories introduced in this section lack a psychological dimension. However, they can be complemented by psychological theories of NLC.
- All of these theories imply the tenet that NLC phenomena that transcend space and time are mediated via the quantum realm, which is thought to serve as a usually imperceptible layer of reality that links individuals experiencing NLC to each other and to the world at large: The arcane nexus. Hence, they are compatible with holism and panpsychism.

5.8 Theories of NLC Implying "Synchronicity"

In this section, I discuss theories of NLC that prominently rely on Carl Gustav Jung's theory of "synchronicity." So far, all sections of this essay have discussed theories of NLC that attribute the occurrence of NLC phenomena to a causal process, even though it often remained unclear how exactly this might work. The closest we came to a solution is the hypothesis that the act of observation causes changes on the quantum level that can be perceived on the macroscopic level as well. The concept of synchronicity, however, breaks with traditional concepts of causality and introduces an entirely new element into theories of NLC.

Synchronicity

Swiss psychologist Carl Gustav Jung (1875–1961) was one of the most influential psychologists of the 20th century. From early in his career, he was interested in NLC phenomena. He had already written his doctoral thesis about trance mediumship by 1902. Musing about the Chinese approach of interpreting unusual coincidences, Jung noticed that the Western world did not have a comparable concept or term to label them. Inspired by Arthur Schopenhauer's writings, among

others, Jung developed a concept describing the occurrence of events that happen roughly at the same time and are meaningfully related, but lack a discernible causal link. He coined the term "synchronicity" for such occurrences. The following famed incident exemplifies such occurrences:

> When Jung and a woman were discussing a golden scarab beetle that had been given to her in a dream, a green-metallic rose-chafer appeared at a window and tried to enter the room they were sitting in. In Jung's words, these rose chafers are the nearest analogy to a golden scarab one can find in Switzerland (Jung, 2010).

The concept of meaningful coincidences can be applied to NLC phenomena. Consider poltergeist incidences: Often, they occur in the vicinity of a person in a stressful social situation. For example, Jung reported that once when he was having a disagreement with Sigmund Freud, he felt a peculiar sensation in his diaphragm, which was immediately followed a loud bang as if from an explosion in a bookcase nearby. As they continued to argue, Jung was sure there would be a second detonation sound in the bookcase, and it duly occurred. He regarded these inexplicable sounds as examples of "catalytic exteriorization" of an inner tension (Jung, 1995).

Here is another example, from my own experience, that epitomizes the "associative" nature of paradigmatic synchronistic occurrences even more obviously:

> When I was a young boy, I broke a piece of an upper front tooth off in a sledding accident. In pain, and fearing a trip to the dentist very soon, I returned home in a very uneasy state of mind. I fetched a small pocket mirror, put it on my desk and inspected the broken tooth. I put my index finger on the broken edge in an attempt to inspect its corner by touch. When I pressed my finger a little harder against the broken edge, a sharp and intense pain shot through my upper jaw, head and body. At *exactly that moment*, I heard a loud

> snapping noise followed by the sound of something falling on my desk. Searching for the reason of these noises, I noticed that a large curved wild boar's tooth, which I had found outside years before and which had lain untouched in a remote corner of my desk for a very long time, had broken lengthwise into two pieces of almost identical size. They now lay about 20 centimeters apart.

To this day, I have not heard of teeth splitting in this way through any ordinary process of efficient causation. I am therefore inclined to regard this incident as a synchronicity, i.e. a meaningful coincidence in which a mental and a physical event correspond without a discernible causal chain. The fact that when I touched my broken tooth another tooth split into pieces illustrates the associative and symbolic nature of synchronistic events. There were of course very many other objects in my room that could have been affected, but were not. Such occurrences exemplify the "catalytic exteriorization" of an inner tension, or if you like, a typical spontaneous incident of macro-PK.

According to Jung, such synchronicities are rooted in an unconscious and nonlocal domain of human existence. Like du Prel and other authors before him, Jung developed a model of psychological existence comprised of three domains: 1) the waking self of an individual, 2) the personal unconscious belonging to this individual, and 3) the "collective unconscious," in which the experiences of all human beings are rooted. He also called this fundamental ontic domain of existence the "*unus mundus*" – the one domain that gives rise to everything we perceive on the epistemic level, including mind, matter, time and space. All individuals experience time and space only with their waking self, he posited, while their unconscious is constantly immersed in the nonlocal domain of existence in which time and space play no role.

In fact, Jung considered all NLC phenomena to be synchronistic phenomena and argued that they spring forth from this background reality, the arcane nexus. This domain not only mediates psychic abilities but is also capable of structuring and

organizing physical phenomena on the epistemic level. Hence, similar to Bohm's model of the implicate and explicate orders, a given "meaningful" constellation of events in the imperceptible background domain can lead to the parallel unfolding of mental and physical phenomena in a correlated manner – but without being causally linked on the epistemic level. Jung argued that such synchronicities occur most often in emotionally-charged contexts, such as love and death. As examples regarding the latter, he listed clocks stopping at death, pictures falling from walls, etc. But he also regarded the results of the experimental test series performed by Joseph B. Rhine and others as results of synchronistic occurrences (Jung, 2010).

Carl Gustav Jung's exchange with Wolfgang Pauli

Because the phenomena constituting such meaningful coincidences are not linked by a causal chain on the epistemic level, Jung typically referred to synchronicity as an "acausal" connecting principle. He chose this term as a result of his extended correspondence with quantum physicist and Nobel laureate Wolfgang Pauli (1900–1958), who had a deep interest in NLC phenomena as well (Atmanspacher & Fuchs, 2014; Gieser, 2005). Pauli was particularly interested in the relationship of mind and brain. In his dialogue with Jung, he suggested that it could be conceived of similarly as a synchronistic phenomenon: Mind and brain activities are two epistemic manifestations of a unitary underlying process in the ontic *unus mundus*.

Adopting quantum terminology again, Pauli conceived mind and brain as "complementary" aspects of a single phenomenon, like the particle and the wave aspect of a photon. Here, the concept of complementarity means that these two different aspects need to be considered together to obtain a full understanding of the nature of a photon, but their descriptions also exclude each other. We cannot explain the particle nature by referring to the wave nature, and vice versa. They are not causally related.

Taking mind and brain as complementary aspects of one phenomenon in the ontic domain implies that we will not be able to explain how the material structure of the brain "produces" consciousness, just as we will never be able to explain how the particle aspect of a photon produces its wave aspect, because such causal relations are simply not taking place. Mind and brain operate in parallel as epistemic aspects of the same psychophysically neutral ontic entity. For Pauli, who always looked for symmetry in nature, this implied a psychophysical parallelism of these two complementary aspects of an individual, that is, the identity view. Consequently, regarding the survival question, Pauli followed his "favorite author" Arthur Schopenhauer and deemed personal postmortem survival as unlikely.

Jung, however, had a much more open and varied perspective regarding these matters than Pauli. Whereas he basically agreed with Pauli in their private correspondence, Jung elsewhere considered an interactive dualism regarding mind and brain to be the most appropriate view regarding their relationship (Jung, 1948, 1954), and he also considered it possible that consciousness can exist without a functioning brain, for example in near-death experiences and even after death (Jung, 1973, 1995, 2010). These ideas are incompatible with traditional notions of dual-aspect monism. If mind and brain are complementary and merely epistemically derived aspects of a single underlying neutral entity, one aspect cannot decouple from the other, or even continue to exist, without the other. In quantum physics, the wave aspect of a photon can neither "interact" with its complementary particle aspect nor can one aspect be destroyed while the other continues to exist on its own. These suppositions are hallmarks of dualist thinking.

Regarding the ontic domain, Jung seemed sometimes to favor objective idealism, and sometimes neutral monism. It therefore appears reasonable to assume that overall, he favored a relative dualism based on an idealism-slanted hybrid monism. Jung furthermore sympathized with hyperdimensional models of reality, especially with the notion that the mental realm might constitute an additional dimension. Moreover, he sympathized with the concept of subtle bodies as entities that

comprise both mental and physical, albeit subtle, properties (Jung, 1973; Smythies, 1983). Jung often related his considerations to Indigenous, early Western, and medieval concepts, in particular to magic and alchemy. In general, he had a very broad and multifaceted notion regarding human psychic life that was similar to earlier notions of the 19th century, such as that of du Prel.

The "Pauli-Jung conjecture" advanced by Harald Atmanspacher

One of the authors who publicized Pauli's and Jung's discussions on synchronicity and the *unus mundus* is physicist Harald Atmanspacher (Atmanspacher, 2020; Atmanspacher & Rickles, 2022). He calls the supposition that the mental and physical are two complementary aspects of one underlying reality which is psychophysically neutral the "Pauli-Jung conjecture" (Atmanspacher & Fuchs, 2014). Atmanspacher embedded it into the philosophical context of dual-aspect monism and discussed its compatibility with other dual-aspect approaches, but also continued to emphasize its significance for understanding NLC phenomena (Atmanspacher, 2021; Atmanspacher & Fach, 2019).

In this respect, Atmanspacher is critical of attempts to study NLC in controlled laboratory settings, because it would be futile to assess qualitative features of NLC (such as meaning) in quantitative approaches under experimental constraints. Instead, he recommended documenting and investigating spontaneous NLC phenomena and exceptional experiences (Atmanspacher, 2021). But whatever NLC phenomena we investigate, Atmanspacher stressed that they are the result of a unified process in the background reality from where the mental and physical percepts spring forth as correlated aspects that have no causal effect on each other. For example, mental causation as described in dualist theories of mind-brain interaction, or psychokinesis as a force exerted by the mind, do not exist in this model. Atmanspacher's work is rich in detail and philosophical depth,

demonstrating where and how the Pauli-Jung conjecture is connectible to modern philosophical and scientific reasoning.

Wolfgang Fach, a former colleague of Atmanspacher at the *Institute of Frontier Areas of Psychology and Mental Health* in Freiburg, Germany, developed a classification of exceptional experiences including NLC phenomena and framed it in terms of the Pauli-Jung conjecture. Based on statistical and qualitative analyses of more than 2,300 counseling cases with clients who reported exceptional experiences, Fach observed that certain phenomenological patterns of exceptional experiences correlate with certain characteristics of social bonding and partnership. These findings enabled him to develop a new conceptual paradigm for counseling and therapeutic treatment of individuals exposed to distressing exceptional experiences (Fach, 2022). His work provides an excellent example of how the Pauli-Jung conjecture can be utilized in practice-oriented research on NLC phenomena.

However, I am not convinced that dual-aspect monism is the correct philosophical frame for Atmanspacher's elaboration of the Pauli-Jung conjecture. Atmanspacher rejected the identity view and the idea of psychophysical parallelism of the mind and brain, stressing that the idea of a one-to-one correlation of neural states and conscious states has been proven to be "pure fantasy" (Atmanspacher, 2014a). He furthermore suggested that epistemic physical aspects can be *uncorrelated* from epistemic mental aspects – and that one of these aspects might even exist *without* any correlate of the other aspect (Atmanspacher & Rickles, 2022).

These propositions are at odds with the essence of conventional dual-aspect thinking and the idea of complementarity. Rather, when these propositions are advanced on the base of an ontological monism, they are hallmarks of relative dualism, as I have shown a number of times. But regardless of terminological quibbles, the essential feature that sets Atmanspacher's and Fach's models apart from other models that allow for the decoupling of mind and brain states is that there is no causal interaction between mind and brain – no matter what states they are in.

Walter von Lucadou's "Model of Pragmatic Information" (MPI)

Specifically with regard to NLC phenomena, the idea of nonlocal correlations between mental and physical events has been elaborated in the "model of pragmatic information" (MPI) by physicist and psychologist Walter von Lucadou. It builds on the assumption that any description of nature has a structure similar to the structure indicated by quantum theory. Hence, core elements of quantum mechanics must also be relevant on the macroscopic scale. The MPI therefore rests on what has been termed "generalized quantum theory" (GQT; Atmanspacher et al., 2002; Lucadou et al., 2007). In GQT, fundamental concepts of quantum theory such as complementarity and entanglement are thought to be applicable to macroscopic processes as well as microscopic. Hence, synchronistic phenomena are interpreted as results of nonlocal "entanglement correlations."

The gist of the MPI is that, like entanglement correlations in quantum physics, NLC cannot be used to transmit a signal or information, for example by "sending" a message to a beloved "receiver" via telepathy. Rather, when these two individuals experience a telepathic contact, for example in a case of crisis telepathy when a mother senses that her child had an accident, what actually happens is this:

Prior to this accident, mother and child were already coupled by an emotional bond. This bond established the entanglement correlation between them, just as two photons remain entangled when they are emitted coherently from the same source. They form a single system that is characterized by "organizational closure," a term von Lucadou adopted from the systems theoretical concept of Francisco Varela (1981).

Therefore, when the child experiences a profound emotion such as receiving a shock in an accident, the mother can sense this shock – not because a "shock signal" travelled from one person to the other, but because they represent a unitary entangled system – just like the measurement of one of two entangled photons has

an immediate effect on the state of the other photon even though no information was transmitted from one to the other.

Hence, according to the MPI, the most appropriate way to investigate NLC is by applying a systems-theoretical approach that looks at properties of the entire system (for example, the conditions that bind mother and child together by forming organizational closure), rather than trying to pin down a repeatable NLC effect or "signal." In fact, trying to obtain repeatable NLC effects in laboratory experiments is doomed to fail in the long run.

This is due to the intrinsic nature of quantum physical entanglement correlations, which will be reflected on the macroscopic level as well: Signals and information cannot be transferred through entanglement correlations in quantum physics. If NLC phenomena could be replicated exactly and reliably under properly controlled conditions, this would be tantamount to using NLC as a means of information transfer. This, however, is precluded in quantum physics and therefore, also in the GQT and MPI. In his model, von Lucadou put much emphasis on this crucial element, calling it the "non-transmission axiom" (NT axiom; von Lucadou, 2015).

As result, the NT axiom of the MPI offers a natural explanation for the finding that NLC phenomena are extremely difficult to replicate under the controlled conditions used in laboratory experiments (Maier et al., 2022; Walach et al., 2021).

In sum, the MPI can account for NLC phenomena in the lab and the replication problem, but also for large-scale spontaneous phenomena such as those reported in poltergeist cases (von Lucadou & Zahradnik, 2004). Because the MPI constitutes a phenomenological model that is chiefly concerned with the functioning of systems, it can be applied to a wide variety of ontological and epistemical isms. However, it is usually contextualized in neutral dual-aspect monism, and this is presumably most appropriate. However, other kinds of non-physicalist positions are of course possible as well – with one important exception: The causal interaction of mind and matter is not compatible with the MPI and its foundation on GQT.

Recently, French psychologist Thomas Rabeyron proposed a theory of NLC he called the "Orpheus Model" (Rabeyron, 2023). It contains the core ideas of the GQT, MPI and the Pauli-Jung conjecture, but Rabeyron added ideas of his own and of other French authors. He put the elusiveness of NLC phenomena at the center of his arguments and contended that parapsychologists should not follow the well-trodden paths of mainstream science when investigating NLC. Rather, in order to come to grips with NLC, they must find their own methods of investigation. In this respect, Rabeyron recommended working with gifted individuals.

Comments

The theories described in this section can all be regarded as spin-offs from Jung's original concept of synchronicity. Though some differences in detail might exist, they all build on the same basic assumptions. Moreover, it is interesting that in contrast to the more liberal view held by Jung himself, all modern synchronicity-based models are irreconcilable with interactionist approaches allowing for information transfer. Walter von Lucadou has formulated the implications of these synchronicity-based theories of NLC most expressively in his "NT axiom." However, not all NLC researchers are yet persuaded that the fundamental validity of this axiom is established. I will propose possible tests of it in Chapter Seven.

Similarly, proponents of modern synchronicity-based theories of NLC have barely discussed postmortem survival. It would seem that individual survival is indeed problematic for the premise that the individual mind and the individual (decomposing) brain are complementary aspects of one and the same neutral entity in the ontic domain. Interestingly, however, several proponents of synchronicity-based models have suggested in private conversations with me that their version of dual-aspect monism allows for the existence of subtle bodies which are neither

purely mental nor physical. In this way, more or less personal forms of postmortem survival could still be conceivable – a notion held by many authors discussing NLC in the 19th century, including Carl du Prel.

To conclude my comments on modern synchronicity-based theories of NLC, I will address the frequent use of the term "acausal" in these theories. This practice goes back to Jung and Pauli themselves, who often depicted occurrences of synchronicity as being "acausal" in nature. Doing so, they emphasized that a "normal" causal link in terms of efficient causation cannot be detected in synchronistic events. However, I, along with many other authors (Braude, 2002, Rao, 1978), believe that the term "acausal" is misleading in this context, as it implies an entire absence of causation.

Naturally, the factors leading to the emotional tensions that are thought to underlie and elicit synchronistic occurrences such as catalytic exteriorizations or crisis telepathy can be regarded as causes. In fact, both Jung and Pauli sometimes attributed the associative nature of meaningful synchronicities to a holistically-operating final causation (Jung, 2010, Meyenn, 1999). Moreover, Suzanne Gieser (2005) pointed out that what Pauli regarded as "induced" synchronicities, such as NLC phenomena achieved via purposeful methods of divination, are apparently enabled by a qualitative, holistic, and "forming" factor in the ontic domain. Similarly, Harald Atmanspacher (2014b) underscored that instances of synchronicity are not entirely acausal but may be the result of "formal causation."

Seen in this light, the theory of synchronicity is well in line with the recently rising interest in alternative forms of causation in natural sciences (Gare, 2019; Levin, 2020; Noble, 2017; Paoletti &Orilia, 2019) and philosophy (Mørch, 2020; Runggaldier, 2014). The term "acausal" carries misleading connotations and is best used only in appropriate contexts in physics, such as radioactive decay. In the realms of life and NLC, it makes much more sense to accustom oneself to concepts of causation such as final or formal causation rather than entertaining the confusing

notion that meaningful correlations between mind and brain as well as NLC phenomena take place without any cause whatsoever.

The gist of this section

- Carl Gustav Jung coined the term "synchronicity" in order to describe "meaningful coincidences" that lack a causal link. By this, Jung meant that they cannot be attributed to the ordinary mode of efficient causation.
- Jung equated synchronistic occurrences with NLC phenomena.
- Most theories of NLC imply the causal interaction between mind and matter, for example by turning quantum potentialities into actualities through acts of observation. Carl Gustav Jung's theory of synchronicity and its spin-offs offer an alternative perspective: NLC phenomena involve no interaction between mind and matter.
- Rather, NLC phenomena are epistemic manifestations of entanglement correlations mediated through the ontic domain.
- Therefore, modern synchronicity-based theories of NLC are usually conceived as a dual-aspect monism on a neutral monist foundation.
- The proposition that there is no interactionism between mind and matter implies that there is also no information transfer.
- The proposition that there is no information transfer implies that NLC phenomena cannot be repeated reliably, but will always remain elusive. Thus, successful replications of specific experiments on NLC are very difficult to obtain and exact replications of experiments will eventually become impossible.

5.9 Miscellaneous Recent Theories of NLC

To round off this journey across the terrain of theories of NLC, I will now present a selection of largely consciousness-based approaches that have gained increased attention in the recent literature and among NLC researchers. These theories represent a current trend of putting enhanced focus on idealism and information processing, using features of today's information technology as metaphors. Some even describe the epistemic domain as a "simulation."

In the field of NLC studies, one author who has argued in numerous publications throughout the past several years that consciousness needs to be regarded as fundamental is remote-viewing researcher Stephan Schwartz. In his view, the ontic domain is a matrix of consciousness, an interconnected collective unconscious of an informational nature, and spacetime is a construct of information, an "informational architecture" created and shaped by "intentioned awareness." By accessing this informational architecture in appropriate ways, NLC phenomena including those Schwartz has studied throughout his career can manifest. He furthermore argues that the manifesting of personalities in spacetime is similar to the creation of avatars in a computer game, since personalities are merely an expression of the fundamental (Schwartz, 2020).

The world as an externally-generated simulation

Thoughts such as these lead straight into the realm of "simulation theories", i.e. theories according to which our life and environment cannot only be metaphorically viewed as a computer-game-type simulation, but actually are, the view taken quite literally. A recent proponent of this idea is independent researcher Simon Duan (2022). He argues that if we live in a virtual world, spacetime must belong to this virtual world as well. Therefore, the generator of this virtual world must be outside of spacetime. In Duan's model, this generator thus cannot be physical. It is a "transcendental computer" that operates in what constitutes the

ontic domain for us, the realm of numbers and forms postulated by Plato. This is why Duan calls it a "Platonic computer."

Because consciousness is fundamental in this theory and the proposed transcendental computing processes are consciousness-based, we can exert effects on its program by using our own conscious aspect and modulate the appearance of our simulated environment, resulting in all manner of NLC phenomena including apports and levitation of large objects.

Harkening back to Kant and his concept of the unknowable thing in itself, Duan (2024) admits that we can never know whether we live in a computer simulation or not. But, he argues, it would make sense to entertain such a notion, specifically in the light of NLC phenomena that can be seen as a natural output of a Platonic computer that generates seemingly physical and also non-physical manifestations. It provides a consistent description of our world and its strangest anomalies, and an explanation for the problem of how matter can arise from consciousness (Duan, 2023).

The concept of a consciousness-based transcendental computer that outputs the epistemic domain and individual beings appears rather technical. Also, one may wonder: Who built this computer, and who wrote its software? Nevertheless, the basic idea behind Duan's concept is appealing for people sympathizing with idealism: At the heart of existence, there is mind, and this mind is active and creative. There is also intelligence. And because even space and time are only outputs of this creative activity in the background, not objectively given and immutable, they can be modulated in any way once we find a method to modulate this output-generating "information architecture" with our own "intentioned awareness", as Schwartz would put it. This does not have to be a conscious process.

However, there are similar idealist concepts that dispense with the notion of an external consciousness-based computer.

The world as an internally-created simulation

Such an approach has been formulated by Federico Faggin, the developer of the first microprocessor for computers. For him as well, consciousness comes first, and he also likens physical bodies inhabiting the physical universe to avatars in computer games living in "a giant quantum virtual machine" (Faggin, 2021, p. 304). But in his model, there is no separate computer anywhere. Instead, Faggin proposes complex processes by which "consciousness units" (CUs) and combinations of them create this physical space.

Each CU is a conscious entity and underpins what appears to us as an individual physical quantum field. The CUs combine and self-organize hierarchically to create increasingly complex systems on the epistemic level, from atoms, molecules, and cells to self-conscious organisms. As in other theories that reference quantum physics, Faggin suggests that the evolution of increasingly-complex structures and forms of life involves the transition of potentialities to actualities through observation. In his theory, the CUs emerge from the highly dynamic, indivisible, and holistic totality of what potentially and actually exists. Faggin termed this totality "One" and maintains that it has the urge to experience and know itself.

According to Faggin, conscious organisms arise from One and comprise a "larger self" of which only the ego is usually self-aware – a perfect model of du Prel's concept of the "transcendental subject"! When the physical body dies, the simulation of the physical disappears and the ego is no longer flooded with information about its physical environment and can become aware of its immersion in the larger self, which is in turn immersed in One. Faggin's model therefore allows for postmortem survival. And since space-time is considered to be a mere simulation instigated by the interplay of CUs and their increasingly complex combinations culminating in conscious selves, other NLC phenomena including

macro-PK are likewise possible when the mode of interplay between CUs and larger selves changes.

As might be expected, information plays a crucial role in a theory that makes references to computers and virtual reality. In a recent book, Faggin described his view of information in more detail, relating the processing of information in important ways to the processes of life and the expression of meaning (Faggin, 2024).

Furthermore, Faggin proposed that "mind (meaning) and matter (symbols) are two coevolving indivisible aspects of the dynamic and holistic 'substance' of One" (Faggin, 2021, p. 318). And since consciousness can be decoupled from the brain and body, surviving their demise, his model represents another example of relative dualism based on objective idealism.

A similar but much more mathematics-based idealist theory has recently been put forward by Donald Hoffman and colleagues. It relies on "conscious agents" (CAs) that the authors regard as projections of what they also call "One." And like the CUs in Faggin's theory, the CAs create spacetime, etc. via dynamic interaction (Hoffman et al., 2023).

The world as a "dashboard"

Neither Duan nor Faggin have specified how the conscious mind correlates or interacts with the "simulated" physical brain. Because Faggin's theory involves the transition from quantum potentialities to actualities, one can invoke a Stappian approach in this context.

The same applies to philosopher Bernardo Kastrup's theory of "analytical idealism." It is a neo-Schopenhauerian type of subjective and objective idealism (Kastrup, 2020, 2021b). As has been suggested by Hans Driesch (1925) and Jon Klimo (1987) before, Kastrup proposes that conscious beings emerge as

dissociated mental complexes that split from a unitary universal mind in a process akin to the onset of dissociative identity disorder (DID). He equates this universal mind or consciousness with the unified quantum field in physics (Kastrup, 2021a), emphasizing with Stapp that superimposed quantum states become manifest upon observation (Kastrup, 2021b). Echoing Kant and Schopenhauer, Kastrup maintained that the physical world is not objectively created and physical at all. Rather, it is a mere representation of something more fundamental and mindful. Viewed from the perspective of Kastrup's concept of DID-like dissociation, the physical world is simply how other mental content looks like from outside, from across the dissociative boundary of individual existence. Using modern technology allegorically, Kastrup describes the epistemic domain as a "dashboard" that we use to mediate our experiences of the ontic domain (Kastrup, 2021b). Donald Hoffman similarly uses the term "interface" for the epistemic domain to illustrate this point (Hoffman, 2020).

In Kastrup's theory, NLC phenomena become possible when the dissociative boundary becomes permeable and transpersonal aspects of universal consciousness bypass the biological senses – a description that strongly resembles the movable or permeable threshold of sensitivity that separates the waking self from its transcendental roots in du Prel's and Myers' theories, from another angle.

Regarding postmortem survival, Kastrup follows Schopenhauer in that he considers it most likely that only a "core subjectivity" can survive the decomposition of the body. The end of the body is equivalent to the end of dissociation. Thus, all individual features of a personality are released into the universal consciousness after death, rather than persisting within an individual agent. However, Kastrup remained open to personal postmortem survival (Kastrup, 2021a) and as mentioned earlier, he rejected psychophysical parallelism, pointing out that mental states and brain states can be decoupled (Kastrup, 2019). Hence, relative dualism might well describe Kastrup's theory, alleviating some of

the challenges of writing in "dualist metaphors" from a monist perspective (Kastrup, 2014).

Comment and the gist of this section

I chose to present these theories at the end of this chapter in order to illustrate that in recent decades, the basic attempts to make sense of NLC have remained the same although new concepts and terms have been introduced into them, relying more notably on meaning and information processing. In the terminology, we find more technology-orientated references, to computers, computer simulations, virtual reality, avatars, interfaces, dashboards, etc., in theories of NLC. But for the most part, these terms are used as metaphors, as are many other terms used in scientific theories.

5.10 Summing up: Theories of NLC from the 20th Century up to the Present

There *are* theories of NLC!

In this chapter, I reviewed and analyzed many theories of NLC, including psychological theories, field theories, hyperdimensional theories, and quantum-physics-based theories. I showed that many of them appear to be compatible with each other, since they often refer to different aspects of NLC that complement each other.

Moreover, they usually share important core assumptions, and likewise share them with theories of NLC from the 19th century. Although thousands of years have passed, three core assumptions have remained virtually unchanged from when people first attempted to make sense of the non-local. They keep being repeated over and over again in different forms.

The first core assumption is that the physical world is only the tip of the iceberg, an excerpt of a larger reality that to which we have no access through our biological sense organs. Plato's cave analogy is still a useful illustration of this point.

The second core assumption is the arcane nexus. Virtually all encompassing theories of NLC postulate that individualized entities are rooted in this larger reality, a common background reality that facilitates NLC.

The third core assumption is that the arcane nexus in the background of existence is non-physical. Consciousness is a fundamental feature of it, either in a pure form (objective idealism) or as a partial property (hybrid monism).

In principle, the arcane nexus can also be conceived as pertaining to the domain of mind in substance dualism. But only a minority of authors in the field have advanced a radical substance dualism, according to which the mind interacts with ontologically different matter (e.g., Beloff, 1989). When dualist approaches have been put forward in the context of NLC, they typically involve only relative dualism on a monist foundation.

Adding to theories of NLC posited before the close of the 19th century, novel developments in the 20th century include the elaboration of numerous partial aspects of NLC and details, such as the mentioned psychological issues; hyperdimensional theories linking physics to consciousness; quantum physical concepts utilized to describe potential processes of mind influencing the brain; and a purportedly "acausal" factor mediating NLC, although this term is better replaced with concepts such as final causation.

Another trend in NLC theorizing is increased avoidance of the term "soul." Whereas it played a prominent role in 19th century theories of NLC, new terms such as "shin" have been introduced – and especially in more recent decades, concepts of souls are barely mentioned in any way. Modern theorists of NLC usually speak only of "consciousness." The question of whether individuals are

rooted directly in the arcane nexus or via an intermediary individual soul has received little attention – presumably because it is very difficult to assess in empirical terms.

In any case, and particularly in the light of the fact that the theories of NLC I have reviewed constitute only a small selection of a large pool of theories, one fact is clear: Contrary to the claims from critics of parapsychology but also some parapsychologists, there is no shortage of theories of NLC. Many theories of NLC share the same core assumptions, even when proposed independently of each other and without knowledge of similar earlier approaches.

Despite this problem, some facets of these theories have been elaborated in increasing detail. As I showed in my publication on the parapsychological synthesis, it is possible to create a synthetic and even broader theory that overcomes some apparent differences, since this has been accomplished before with, for instance, the formulation of the "evolutionary" or "modern synthesis" in biology (Nahm, 2022b).

The diagram on the next page illustrates how different kinds of theories of NLC are related and could be integrated into such an overarching approach.

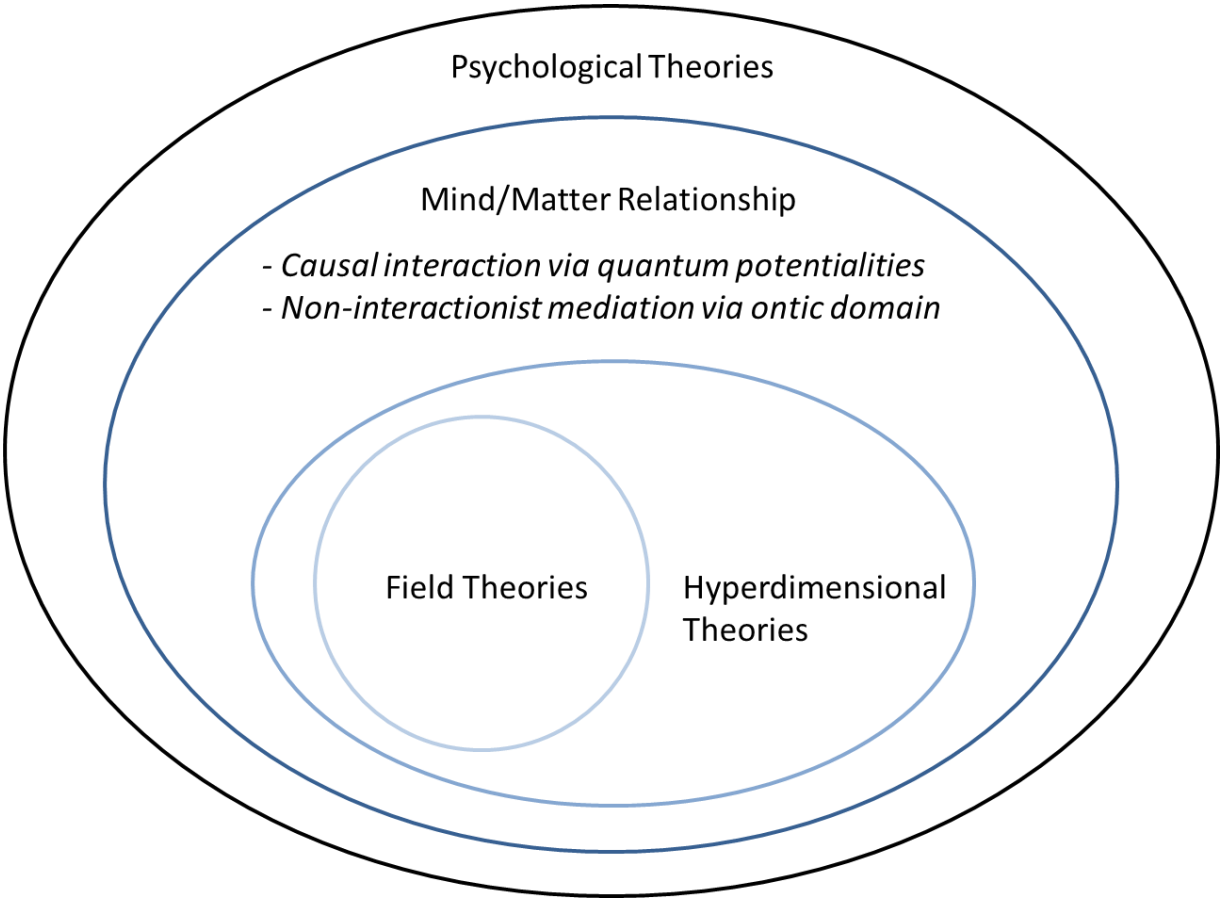

Fig. 7: Illustration of the relationship of different kinds of theories of NLC in a proposed parapsychological synthesis. Because psychological theories are not bound to particular isms and ontological commitments, they are compatible with many other theories. Similarly, theories focusing on the relationship of mind and matter are conceivable in hyperdimensional theories and field theories, while hyperdimensional theories can comprise field theories.

Granted, contemporary mainstream theories of physics and chemistry are better elaborated than theories of NLC, especially in mathematical terms, and provide causal explanations for the relevant phenomena. But this difference is only a result of the nature of physical and chemical processes: They are reliably repeatable. One cannot require that theories of NLC mirror these physical theories. The nature of NLC phenomena is entirely different and therefore poses different challenges. Theories of NLC need to follow their own pathway (Nahm, 2022b).

Comments on the factual incompatibilities of theories

The fact that there are considerable differences between some theories of NLC should also not be ignored. Such differences are perfectly natural in scientific theorizing, and in fact are a sign of a healthy plurality and diversity of approaches.

As a biologist and consciousness researcher, I cannot evaluate the details of the potential compatibilities and connectivities of theories of NLC involving cosmological theories and quantum physics. Certainly, however, there are notable incompatibilities between some theories, for example, the hyperdimensional theory of Burkhard Heim and its connectivity to theories of mainstream physics. Heim's theory builds on very different basic assumptions than those employed in mainstream physics, and it is therefore difficult to develop an integrative model combining both approaches. Nevertheless, as contemporary physics appears to be stuck in something of a dead end at the moment (Hossenfelder, 2018), and could be advanced by including consciousness-related features (Carr, 2015), it might be worthwhile for experts with open minds to test Heim's theory and its implications.

Another fundamental incompatibility exists between most theories of NLC and the NT axiom of the Model of Pragmatic Information (MPI) with its foundation in the Generalized Quantum Theory (GQT). In the MPI and GQT, it is deemed fundamentally impossible to transmit information-containing signals via NLC.

But the history of science has shown that theories relying on dogmatic axioms that exclude all exceptions very often undergo revisions. It is usually only a matter of time before exceptions to axiomatic rules are documented as so-called "anomalies." The entire scientific discipline of parapsychology is concerned with alleged anomalies that are not supposed to occur from the perspective of many! With this in mind, I think it is too early to close the door on information and signal transfer in theories of NLC. Before we can close this door with reasonable confidence, more experimental work is necessary (see Chapter Seven).

Moreover, authors who have postulated that mind and brain are not linked via causal interaction but represent correlated epistemic aspects of a third unitary element have so far not specified how exactly states of mind and brain can be decoupled in cases of NDEs after cardiac arrest (Rivas et al., 2023), coma patients with dysfunctional brains who nevertheless are fully conscious (Nahm et al., 2024), or CORT including cases of replacement reincarnation (Nahm, 2023a).

Aside from these open questions, it is nevertheless obvious that synchronicity-based theories have added substantially to advancing theorizing about NLC. Their tenet that efficient causation is insufficient for understanding NLC is a particularly significant contribution. We need different concepts of causation such as final causation in order to come to grips with NLC phenomena. I will return to this topic in the next chapter.

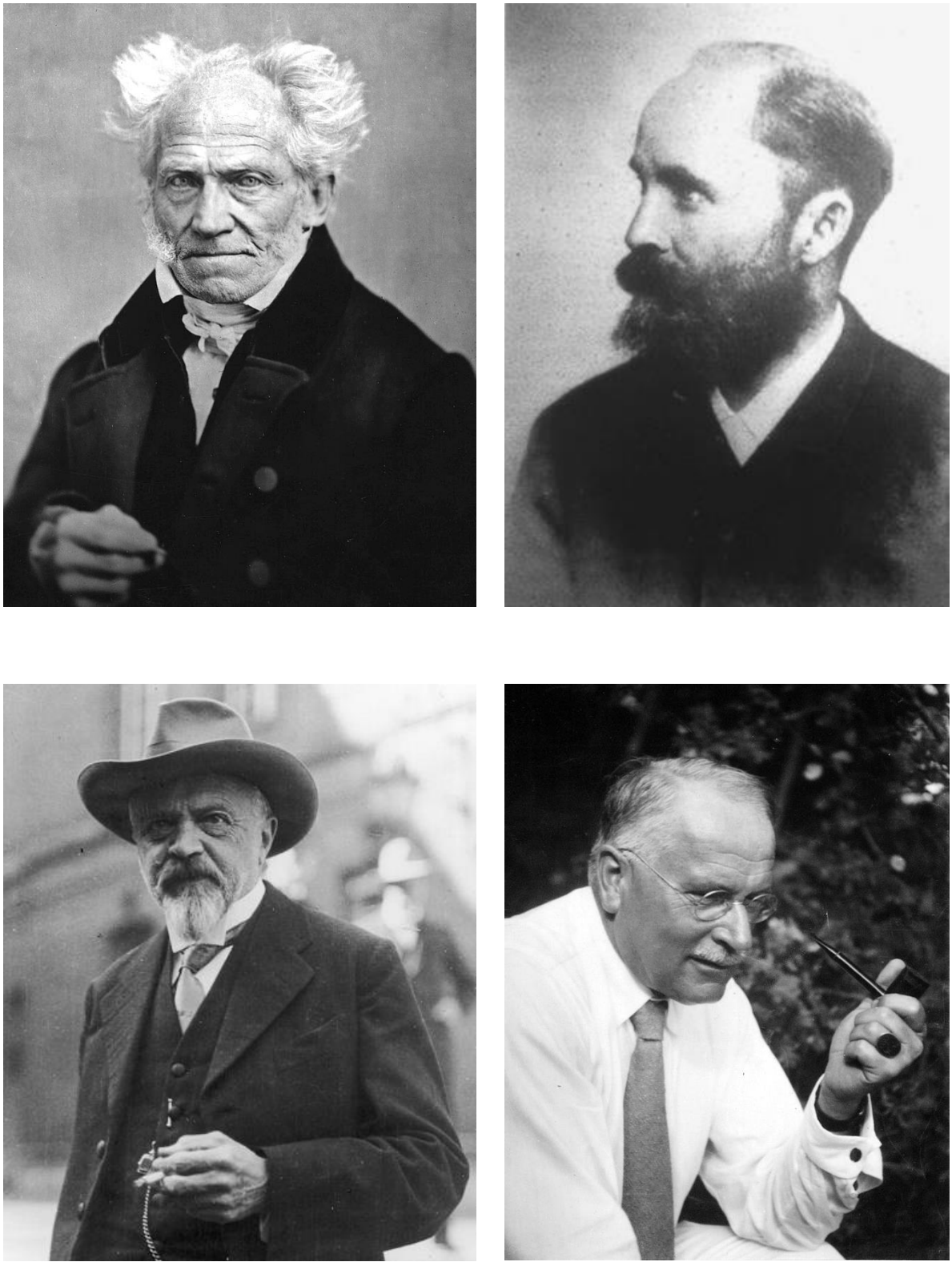

Plate 1: Four important pioneers who laid foundations for contemporary theories of non-local consciousness. Top: Arthur Schopenhauer (1788–1860) and Carl du Prel (1839–1899). Bottom: Hans Driesch (1867–1941) and Carl Gustav Jung (1875–1961).

6 Advancing the Parapsychological Synthesis

6.1 The Need for Extended Concepts of Causation

The focus on reductionist efficient causation or "billiard ball causation" in the natural sciences is insufficient for understanding life in all its facets including consciousness and its roots in the arcane nexus. A plethora of findings in biology, including evolutionary biology, provide substantial evidence for this (e.g., Kelly et al., 2007; Levin, 2020; Meyer, 2014; Nahm, 2007). And NLC phenomena constitute some of the strongest (Nahm, 2007, 2019b). Especially in the first half of the 20th century, many vitalists argued along these lines already. Currently, I believe that one of the most promising ways to advance theories of NLC is to consider extended concepts of causation. One of these concepts is wholeness causation.

Hans Driesch's "suspension theory" and "wholeness causation"

Beginning with Aristotle, numerous philosophers conceived the epistemic world as being composed of different superimposed and hierarchical strata or levels. Traditional classifications contain the strata of matter, life, and mind (Hartmann, 1940; Wenzl, 1951). They can be further divided into numerous substrata (e.g., Polanyi, 1966, 1968). Proponents of such models have stressed in varying formulations that it is impossible to explain the organizing principle of a higher level by the principles governing the lower level. For example, Michael Polanyi (1968, p. 1311) stated that living beings "form a hierarchy in which each higher level represents a distinctive principle that harnesses the level below it (while being itself irreducible to its lower principles)."

The principle of processes on a superordinate level "harnessing" or governing processes on the subordinate level implies *downward causation*. For example, recent research has shown that electrical fields in a developing organism can change the

organism's physical form, overriding the usual configuration of their form encoded in their genes. This effect can even be inherited (Levin, 2020).[21]

In recent decades, the empirical evidence for biological downward causation in the morphological development of organisms has drastically increased (Gare, 2019; Levin, 2020; Noble, 2017). As a result, many ideas that had already been advanced by pioneering vitalists, holists and organicists a century ago are currently being re-invented.

However, biologists active in this area usually do not discuss the even more compelling evidence for downward causation in organisms, specifically, consciousness-induced physiological and morphological effects on body tissue such as placebo effects, false pregnancies, purposeful changes of body temperature and heart rate, hypnotic inductions of skin burns, blisters, bleedings, allergies, breast enlargements, and stigmata (Kelly, 2007; Nahm, 2012b). Henry Stapp's ideas of how the mind affects brain states by means of the quantum Zeno effect can also be seen as an example of downward causation. Similarly, Wolfgang Pauli's idea of "induced synchronicities" can be seen in this way, without even involving interactionist tampering with the quantum realm. In Burkhard Heim's theory, consciousness and organic life are enabled via "streams of activity" mediated by the higher dimensions, particularly the fifth "entelechial" dimension. All these theories therefore imply consciousness-induced processes of downward causation.

Arguing that life and consciousness cannot be explained by way of a reductionist and physicalist approach, vitalists such as Hans Driesch and Eduard von Hartmann postulated that organisms can only be understood when one assumes that their highly complex development and functioning is orchestrated by principles of downward causation. Von Hartmann (1907a) adopted the Aristotelian term "final causation" in this respect, whereas Driesch coined the term "wholeness causation"

[21] We find the opposite principle of upward causation when changes on the subordinate level affect the behavior of processes on the superordinate level, for example when a single mutation in the genes of a germ cell results in developmental anomalies affecting an entire organism.

in order to put more emphasis on the irreducible and indivisible wholeness that characterizes the organization of individual organisms (Driesch, 1908). I regard it as a specific kind of final causation.[22] The soul-related entelechy of organisms behind the screen of the epistemic world underpins this principle of wholeness causation. Similarly, Jan C. Smuts, the founder of holism, considered wholeness to be a true causal factor (Smuts, 1934-1935). However, these organizational principles of downward causation do not violate the functional mode of efficient causation but go hand in hand with it, being superimposed on it (Fig. 8).

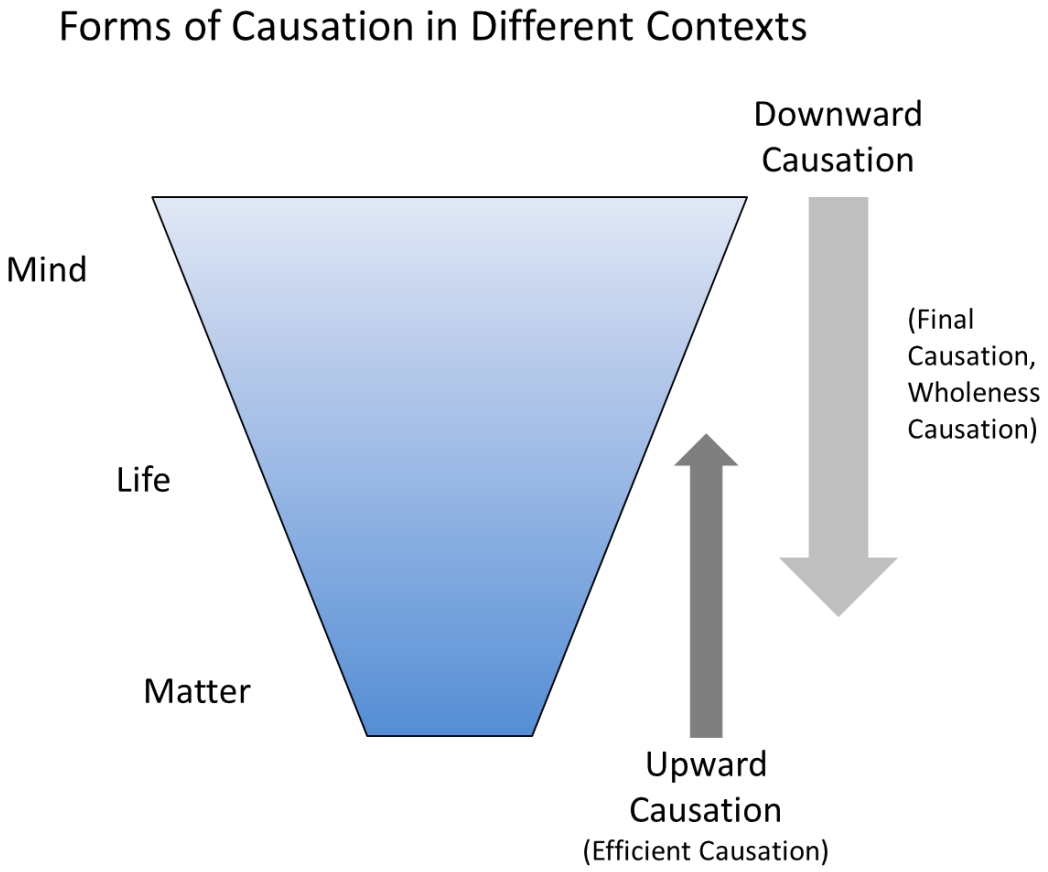

Fig. 8: Processes on different strata or levels of the epistemic world (mind, life, matter) are directed by different principles of causation. The inorganic realm of matter is directed by upward causation mediated by efficient causation. The functional mode of organisms in the organic realm of life is directed by downward causation mediated by final or wholeness causation (see text). These forms of causation are superimposed on processes of efficient causation that govern inorganic matter. The realm of mind is directed even more strongly by downward causation.

[22] In fact, I am inclined to agree with Dominican friar and philosopher Thomas Aquinas (c. 1225–1274) who argued in his influential treatise *Summa Theologiae* that final causation is the first among causes, the cause of causes.

But of course, the question arises: How exactly does this superimposition of final or wholeness causation on efficient causation work? How is it possible to affect the behavior of atoms or molecules in such a way that they behave differently than they would in an inanimate context? These are the questions that notoriously plagued vitalist theories. Because vitalists were usually not able to provide a concrete explanation and answer, most scientists rejected vitalism (and still do). This question is in fact equivalent to the question in dualist philosophies of how the mind can affect the physiology of the brain, and the difficulties in finding an answer likewise led to the rejection of interactionist dualism by many.

Driesch was well aware of this problem. He therefore proposed a hypothetical model of how entelechy might govern the behavior of molecules in organisms without violating the law of conservation of energy. It can be called the "suspension theory." He described it in this way:

> "Entelechy is able […] to *suspend* for as long a period as it wants any one of all the reactions which are *possible* with such compounds as are present, and which would happen without entelechy. And entelechy may *regulate* this suspending of reactions now in one direction and now in the other, suspending and permitting possible becoming whenever required for its purposes. […] Because it possesses this faculty without being of the nature of an energy at the same time, entelechy is *the* non-physicochemical agent.
>
> Let it be well understood: we do not admit that entelechy may transform potentials into actual happening by means of a so-called ["activation"] in any sense. […] We only admit that entelechy may set free into actuality what it has itself prevented from actuality, what it has suspended hitherto." (Driesch, 1908, vol. 2, p. 180)

Driesch maintained that the effects of entelechy can be considered to be a sort of "overriding" of processes of inorganic nature by biological processes. This would

be akin to the overriding of gravity by electromagnetism under certain circumstances, although this kind of overriding requires energy, in contrast to the entelechial mode of functioning. He furthermore added that NLC phenomena might be accounted for by such a process, i.e. an overriding of inorganic processes by suspending potentialities from becoming actualities and permitting only the desired potentialities to become actualities.

Not surprisingly, Driesch's suspension theory has been roundly criticized. From a classical-physics point of view, it is in fact not clear how entelechy can "suspend" the natural behavior of molecules, in particular without needing energy. It appears as if Driesch's theory would still violate the law of conservation of energy, despite his assertion to the contrary.

Now, however, we have already come across a virtually identical concept of turning potentialities into actualities: Henry Stapp's theory of how quantum potentialities can be turned into specific actualities through observation using the quantum Zeno effect. Remember: Through repeated very quick observations by a probing agent, quantum potentialities can be "frozen" until they transform a potentiality into an actuality that matches the probing agent's intention. And because Driesch's entelechy possesses consciousness-related properties rooted in the ontic domain, especially in its function of a psychoid that governs action, one can regard entelechy as such a probing agent. It is in fact astounding that Driesch, in accurate anticipation and already using the same Aristotelian terminology, wrote that in organisms, entelechy may transform potentials into actual happenings by means of "suspending" physical processes – long before identical formulations were put forward by quantum physicists and the quantum Zeno effect was discovered.

If one is willing to extend the role of probing observer to the unconscious minds of all forms of life, it seems that Driesch's suspension theory of entelechial efficacy and wholeness causation can be connected neatly to the implications of quantum physical findings suggested by Stapp.

As mentioned above, different lines of biological research demonstrate that cognition and consciousness are not found only in human beings. The more we learn about animals, plants, fungi, and single-celled organisms, the more it appears that even the most primitive forms of life display not only signs of memory, but also of cognition (Jaeger et al., 2024; Shapiro, 2021). Modern biology therefore supports Driesch's insisting that organisms must be regarded as indivisible wholes in which cognition, reaction, and morphogenesis are inseparable manifestations of a unitary and goal-oriented soul-like entity rooted in the ontic domain.

Comments

So far, this all sounds very promising for theories of NLC. It may seem that they are well-connectible to mainstream science. The transformation of quantum potentialities into actualities by observation or measurement has been endorsed by many authors as a core element of minimalistic and also non-minimalistic theories of NLC, for example, by David Bohm, Federico Faggin, Bernardo Kastrup, Stuart Kauffman and Dean Radin, Henry Stapp, Evan Walker, Michael Whiteman, and George Williams.

However, it should be noted that the mere act of observing quantum systems might not be sufficient for eliciting NLC phenomena. This is why Henry Stapp, a renowned and seasoned quantum physicist, introduced the quantum Zeno effect in his theory as a means by which the development of quantum potentialities can be influenced in intended directions.

This hypothesis could be strengthened considerably if we could obtain empirical evidence supporting it. For example, are there experiments that demonstrate the transformation of quantum potentialities into actualities on macroscopic scales? Are there empirical indications of the efficacy of the quantum Zeno effect in physical or biological systems, or in NLC research?

Unfortunately, direct empirical evidence appears to be comparatively weak. Even in quantum physics, the role of observation as a cause for the transition of potentialities to actualities continues to be discussed controversially. Physicists already disagree on what exactly counts as an observation or a measurement, who or what counts as an observer (a mechanical detection device, a cat, an ant, an amoeba?), or from which point a measurement constitutes an interference or perturbation of the "observed" system and goes therefore beyond mere observation by a mind. This is, for example, the case when photons are shot on atoms as a means to "observe" the behavior of electrons in assessments of the quantum Zeno effect.

The quantum Zeno effect itself is well confirmed. However, experiments have so far focused on small-scale quantum systems and the effect is not particularly stable. It requires well-defined experimental setups and the prevention of too much "noise" that may inhibit the emergence of this effect (e.g., Kumar et al., 2020). The frequency of observation is another critical issue. Under certain circumstances, it can even lead to the *acceleration* of the development of quantum states rather than slowing them down or "freezing" them – an effect that came to be known as the "quantum anti-Zeno effect" (e.g., Chaudry, 2017). It could even be that the quantum Zeno effect is only possible in a limited class of quantum systems, whereas the quantum anti-Zeno effect is much more ubiquitous (Kofman & Kuritzki, 2000).

This finding raises interesting questions with respect to theories of NLC relying on the quantum Zeno effect, such as: Must the "probing agents" know in advance what frequency of observation they need to apply in order to shift the development of a quantum states in the brain (and/or elsewhere) in the desired directions? In addition, David J. Chalmers and Kelvin J. McQueen pointed out that the quantum Zeno effect poses serious theoretical challenges to the "ordinary" hypothesis of observation-induced reduction of potentialities to actualities (Chalmers & McQueen, 2021, 2024).

Overall, it seems that eliciting NLC phenomena through turning quantum potentialities into actualities by acts of observation might not be as trivial and self-evident as it is sometimes portrayed in theories of NLC. Building theories of NLC on the acts of observations of quantum systems and the quantum Zeno effect rather appears to be a challenging undertaking. In order to advance contemporary theories of NLC, it would be best for authors entertaining such views to go into more detail and explicitly address the following questions:

- Does their model rely on the quantum Zeno effect or not, and what are the reasons for the chosen approach?
- If it does, to what degree can it stand up to the aforementioned challenges?
- If so, is the quantum Zeno effect necessary for the generation of all NLC phenomena or only for specific subsets, and if the latter, which ones?
- Does their model cover macro-PK?
- Does their model follow Eccles' and Stapp's proposition that the mind's influence on the brain is in effect generation of PK?
- If so, what are the arguments that allow the adaption of the presumed mode of influence of the mind on the brain, a highly complex and dynamic organ, to influencing the behavior of, say, inert stones, spoons, or teeth?

Most of the theories of NLC I reviewed are unfortunately rather scanty in discussion of these important questions.

The good news is, however, that there *is* empirical evidence in the context of NLC that observation can directly influence the transition of quantum potentialities to actualities – even though this evidence is limited to the microscopic scale only. It is provided by experiments in which the behavior of photons was influenced. The results of several experiments have yielded statistically significant deviations from the norm (for a review, see Milojević & Elliott, 2023). But even though this experimental setup is much simpler and relatively noise-free compared to brains or

situations in which macro-PK is supposed to occur, it is rather susceptible to disturbances. It remains to be determined to what degree the mere act of (intentioned) observation really does cause large-scale NLC phenomena, and how much applying quantum physical findings to macroscopic occurrences is warranted.[23]

Interestingly, other experiments have yielded significant deviations from ordinary random processes generated by random event generators (REGs) when *no one* was actively trying to influence them. These deviations occurred in apparent correspondence with emotional events, such as dying (Janu et al., 2023) and many other emotionally intense occurrences that affected large portions of the global population (Nelson, 2019; Radin, 2023).

The latter results are particularly intriguing. They are based on data that had been collected for more than 20 years at different locations on our planet in the context of the *Global Consciousness Project* directed by Roger Nelson. They suggest that "some aspect of collective consciousness appears to be anomalously associated with aspects of the physical world" (Radin, 2023, p. 77). If this were indeed the case, it would lend additional support for the existence of an arcane nexus of beings. But it would also signify that an individual need or intention to influence REGs or other material processes would not be necessary for the reduction of potentialities to actualities – NLC phenomena could occur quite independently of efforts of purposefully probing "agents" as in Stapp's theory.[24]

[23] For a suggestion of how potential quantum Zeno effects could be detected in simple biomolecules, see Kauffman & Patra (2023).

[24] There is an alternative hypothesis according to which the highly statistically significant data of the Global Consciousness Project are created by unconscious precognition of the researchers involved in this project (Bancel, 2017). I suppose this would also have to apply to the data collected by Wolfhardt Janu and his team (2023). However, this alternative interpretation is criticized by Roger Nelson on several grounds (2017, 2019, 2024).

These results would furthermore indicate that NLC is not *always* driven by individual needs or purposes as hypothesized in the FST of Jim Carpenter and the PMIR of Rex Stanford. It thus opens wider perspectives of the ubiquity of NLC.

It might be rather that these kinds of results are due to a collective consciousness-based field or mere "unintended" correlations between agitated and/or collectively focused states of minds and unusual processes of the physical world, as suggested in some forms of dual-aspect monism and the Pauli-Jung conjecture (Radin, 2023).

Hence, although the theories of NLC that build on the causal role of purposeful minds affecting the quantum realm offer promising elements for making sense of the non-local, including macro-PK, much needs to be done before we can regard these theories as solidified by empirical evidence. For these reasons, I will introduce additional considerations about consciousness-induced downward causation in the next section, building on propositions advanced by Schopenhauer.

6.2 Consciousness-Induced Downward Causation: An Updated Perspective

Life conceived as a dream

What if life is but a dream? I already pointed out that it is impossible to prove to anyone including yourself that you are not dreaming right now. Dreams can be so realistic that it is impossible to decide in real time whether you are dreaming or not. While I was personally experimenting with lucid dreaming over about two years, I frequently performed "reality checks" in my dreams in order to find out whether I was dreaming or not. On several occasions, I decided I was experiencing the reality of waking life when I critically examined my environment – but then woke up and thereby realized I had been dreaming.

Similarly, in experiences of so-called "false awakening", people are perfectly convinced that they have woken up from sleep. They may leave the bed, get dressed, go into the bathroom, and so on; everything looks normal and goes as

usual. But eventually, they realize that they are in fact still dreaming when they suddenly find themselves awakening in their bed again. Convinced that they have finally woken up in reality, they leave their bed again, enter the bathroom again, etc., only to find out that this was just another false awakening! Such episodes can be experienced a number of times in succession.

In short, we can experience quite realistic environments in a subjective and mental dreamspace. Even the usual mode of causation can be intact. Shared dreams furthermore demonstrate that it is possible to share a stable intersubjective environment with others in this dreamspace, at least for a short time.

Now, imagine being in an extraordinarily stable dream together with your friends Jill and Jim. You perform a reality check and conclude: This is not a dream, this is waking life. Perception and logical thinking function normally. You become interested in your environment and start examining it. There is space, time and matter. So long as your environment continues to remain stable, you detect certain regularities in the processes you observe, and attribute them to "natural forces", the characteristics of which can be described metaphorically as "laws of nature." So long as matter remains stable in this dream, you are able to split it into ever smaller solid pieces – until eventually, perhaps only on a very small scale, these solid pieces turn out to be not made of solid matter at all. At the heart of what you perceived as matter in this dream, you may find very strange basic structures that defy logical understanding and explanation. Matter may evaporate into immaterial quantum fields, quantum potentialities, probability waves, etc., but this doesn't appear to affect your environment. Nevertheless, on occasion, strange things happen in this dreamspace as well: Sometimes, objects disappear or move in inexplicable ways, or you seem to share thoughts and feelings with others. You may wonder why, because these occurrences are at odds with the traditional laws of nature.

But eventually, you wake up and everything becomes clear: All this was perfectly normal and natural, because you were only experiencing a long and stable dream! Not only matter and quantum fields, but also space and the supposed natural

forces, never existed objectively and independently of your experience. They were a mental construct that facilitated your stable dream environment and experience. As a mental construct, they could become unsteady on occasion and allow all kinds of weird things to happen, as happens in more ordinary and less stable dreams. The next day, you meet Jill and Jim – and find out they had the very same dream. Then, things become really interesting, and you may wonder: What is reality, and how does it function?

The world as will and representation: Schopenhauer revisited

The similarity between dreams and waking life is so obvious that very many authors from different eras and cultures have written about it already, especially in Eastern traditions. Among Western philosophers, Arthur Schopenhauer proposed that life can be regarded as a dream. More recently, reincarnation researcher Jim Tucker suggested that we all live in a shared dream (2021). The idea that our reality is indeed a dream-like, self-created representation of aspects emanating from a fundamental will in the ontic domain has interesting implications for understanding our waking life – in particular with respect to causation, the relationship between mind and matter, and the law of conservation of energy. I will entertain some thoughts on this as follows.

The starting point of my considerations is that Schopenhauer regarded natural forces such as gravity and electromagnetism as the most basic representations of the spiritual will in the epistemic domain. Hence, when you climb the Leaning Tower of Pisa and drop a pea, in falling it merely behaves according to a fundamental manifestation of the spiritual will. We call this a natural force, gravity.

But in essence, that which underlies the behavior of matter on the epistemic level is *always* an immediate expression of the very same will. The will expressed as gravity that makes a pea fall when you release it from your hand also underlies the reactions of plants and lower organisms to physical stimuli, and the purposeful

actions of higher organisms according to their individual motives. The spiritual will in the ontic domain is the sole "natural force" that underlies the behavior of matter on all epistemic levels of organization, and it objectivates itself on these different levels through the type of causation appropriate to each level. Schopenhauer argued thus:

> "From the most powerful, most significant, and most distinct phenomenon we seek to learn to understand the weaker and less complete. […]
>
> I must recognize the inscrutable forces that manifest themselves in all the bodies of nature as identical in kind with what in me is the will, and as differing from it only in degree. […]
>
> From the law of motivation I must learn to understand the law of causality in its inner significance. Spinoza […] says that if a stone projected through the air had consciousness, it would imagine it was flying of its own will. I add merely that the stone would be right." (Schopenhauer, 1969, vol. 1, pp. 125f)

Because pursuing a purpose is one of the characteristics by which living beings differ from inanimate matter, Schopenhauer maintained in a thoroughly vitalist manner that the key to understanding organisms is final causation, whereas the key to understanding inorganic nature is efficient causation (Schopenhauer, 1969, vol. 2, p. 329).

This is relevant for considering implications for the law of conservation of energy: When a pea falls from a tower, no one needs to use energy to accelerate it due to the gravitational force prevailing on earth's surface. For us observers, its falling simply represents an epistemic interpretation of a process occurring in the ontic domain. Similarly, the movements of molecules in a holistically-developing organism according to its soul-related entelechy simply represent a direct epistemic expression of a process occurring in the ontic domain. No one needs to use energy in order to push molecules in developing organisms from place to place. The entelechial mode of final causation is superimposed on the epistemic mode of

efficient causation applying to inorganic matter. On the epistemic level, no extra effort is required for this.

In essence: *Just as gravity is a natural force, entelechy and motives of individual beings need to be regarded as natural forces as well.*

They all constitute increasingly complex and superordinate representations of the same primordial will to live. Just as the falling pea or stone follow the pathway of mysterious gravity, the molecules in developing organisms follow the pathway of mysterious entelechy. Schopenhauer expressed it this way:

> "The body of an animal is precisely nothing but the *will itself* of that animal brought to cerebral perception as representation – through the forms of Space, Time and Causality – in other words, the mere visibility, objectivity of the Will. […]
>
> For here artist, work and materials are one and the same. Each organism is therefore a consummate master-piece of exceeding perfection. Here the will did not first cherish the intention, first recognise the end and then adapt the means to it and conquer the material; its willing was rather immediately the aim and immediately the attainment of that aim; no foreign appliances needing to be overcome were wanted – willing, doing and attaining were here one and the same. […]
>
> The appearance of every animal therefore presents a totality, a unity, a perfection and a rigidly carried out harmony in all its parts which is so entirely based upon a single fundamental thought, that even the strangest animal shape seems to the attentive observer as if it were the only right, nay, only possible form of existence." (Schopenhauer, 1889, pp. 276f)

Hyperdimensional models of the ontic domain are particularly useful to illustrate such holistic processes of objectivation that are mediated via the ontic domain. By means of analogies, they can be used to visualize how molecules in organisms can

behave in a holistic and coordinated manner without needing extra energy for this. To understand this, let us return to Flatland for a moment.

Figure 9 shows a three-dimensional object passing through the two-dimensional world of Flatland from a right angle to it. Flatlanders, who can only look at this process from the side, can only perceive three lines that suddenly appear in their world and move closer to each other in a seemingly coordinated manner. The lines eventually grow together, forming a single larger line. A little later, this line disappears.

Without being able to glimpse into the three-dimensional "hyperspace", Flatlanders are quite unable to understand what happened. They cannot find an "efficient" cause for the appearance of these lines and their coordinated and seemingly purposeful behavior. Likewise, they cannot detect any energy that makes these lines move, although from their perspective, their movements across Flatland must require energy. As a result, Flatlanders probably regard the appearance, behavior, and disappearance of these lines as "paranormal."

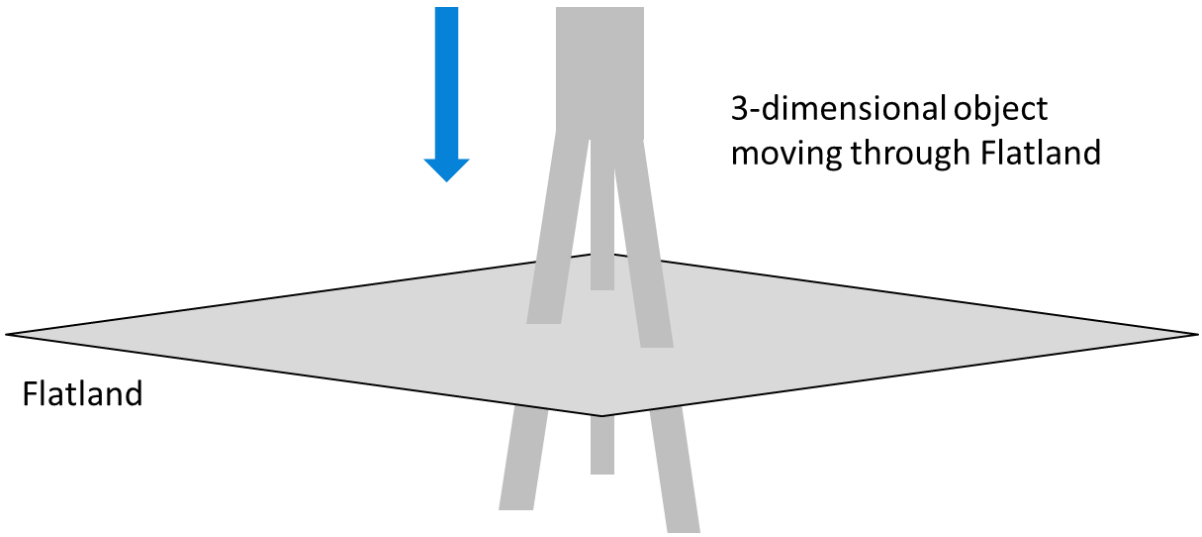

Fig. 9: Illustration of a three-dimensional object that passes through a two-dimensional world, Flatland. For two-dimensional people living in Flatland, the passing of this object, and the coordinated movements of the three locations in contact with their world, would be incomprehensible.

Evidently, this notion of the Flatlanders is inaccurate. All that happened is that a three-dimensional structure moved through their two-dimensional world. Such processes can happen quite naturally because, unbeknownst to its citizens, Flatland is only a tiny excerpt of reality at large. Flatlanders cannot understand that their world is not causally closed but open to influences from elsewhere. As evidenced by NLC phenomena, we three-dimensional earthlings might be in a similar situation.

Seen in this way, the factors underlying wholeness causation on the epistemic level can be attributed to holistic properties of organisms in the ontic domain, thereby providing added impetus for taking hyperdimensional theories of reality seriously (Nahm, 2007).

From this perspective, we do not have to invoke the quantum Zeno effect to prevent molecules from behaving inappropriately, to "freeze" or "suspend" their quantum potentialities until the time seems right to release them. Such a mode of entelechial functioning would constitute an unnatural break in the way a holistically-organized entity in the ontic domain becomes manifest on the epistemic domain. In the words of Schopenhauer, the will did not "first cherish the intention, recognize the end and then adapt the means to it and conquer the material." Although Driesch maintained that wholeness is *the* causal factor in the realm of life, and proposed his suspension theory as a means to depict entelechial functioning, Schopenhauer's view is in fact even more holistic and straightforward.

Similarly, under normal circumstances, the behavior of molecules in the brain correlates automatically with mental processes simply because they are both expressions of an associative process in the ontic domain. There is no direct interaction between mind and brain, not even on the quantum level.

This model reflects the views about the mind/brain relationship advanced by Carl du Prel, Eduard von Hartmann, Wolfgang Pauli, David Bohm, Harald Atmanspacher, and others.

But because personal motives guiding the behavior and action of organisms are fundamental representations of the will in Schopenhauer's view, consciousness-related properties of the higher organisms at least have a general sovereignty over the correlated physical and physiological processes.

In the relative dualism maintained by, for example, du Prel, mind and brain can also become thoroughly decoupled as a result of processes in the ontic domain. And yet, even when mind and brain are not correlated any more, they can still affect each other, at least on occasion. But also in these instances, this influence is not due to direct interaction but rather via a process of association. These mutual influences take a route through the ontic domain (see also von Hartmann, 1907b; Atmanspacher & Rickles, 2022). In extreme cases of decoupling and renewed correlation with a material component, this results in CORT and cases of replacement reincarnation.

This approach constitutes a decidedly non-mechanistic and non-reductionistic approach towards understanding biological functioning. It builds on a truly holistic kind of downward causation. Moreover, it does not rely on quantum mechanical processes of whatever kind as the starting point for macroscopic changes. Instead, because a biological organism is a direct objectivation of an individualized aspect of the will in the ontic domain, its conceptual wholeness governs its development and functioning in the epistemic domain right from the start – and down to its most minute details. As postulated by Arthur Schopenhauer, Hans Driesch, and Jan Smuts, this kind of wholeness constitutes a true causal factor. But of course, it entails a different mode of causation than efficient causation – a superordinate final or wholeness causation.

To be able to refer to the basic elements of the considerations advanced above in a simplified manner, I call them the "Schopenhauer conjecture" following from the Pauli-Jung conjecture. The Schopenhauer conjecture includes the following tenets:

1. Natural forces and factors governing the development and behavior of organisms are all expressions of the same non-physical dynamism in the monist ontic domain.
2. Processes of life are objectivations of holistic dynamics in the ontic domain that manifest on the epistemic level by way of final causation.
3. Because factors governing processes of life are akin to natural forces, this manner of final causation does not require additional physical energy to realize its organizational and structuring efficacy on the epistemic level.

Although the Schopenhauer conjecture in its original form is based on objective idealism, it is in good accord with synchronicity-based theories of NLC and the Pauli-Jung conjecture according to which the mental and physical are two aspects of a psychophysically neutral domain. Depending on how consciousness is defined, the Schopenhauer conjecture may also be framed as hybrid or neutral monism (see footnote 4 on p. 24). Given that Pauli and Jung were influenced by Schopenhauer, the close relationship of the Schopenhauer conjecture, the Pauli-Jung conjecture and synchronicity-based theories of NLC is of course not surprising.

The world as a holistic process of involution

From the perspective of the Schopenhauer conjecture, there is no need to invoke the transformation of quantum potentialities into actualities and the quantum Zeno effect to make NLC phenomena possible. The microscopic realm of quantum physics might not be as decisive for facilitating NLC phenomena as is suggested in many theories.

Taking the analogy between waking life and dreams a little further, it is worthwhile to note that the environment in (shared) dreams is not composed of "dream

quarks" or "dream quantum fields" that construct the dreamspace via specific modes of upward causation or self-organization into ever more complex forms of dream matter. By contrast, the largest possible element in (shared) dreams, namely dreamspace itself, is already a projection of the organizational property of consciousness – the "will" of the dreamer(s). Hence, everything contained in it, including potential dream quantum fields and dream atoms, are expressions of an informational architecture effectuated via consciousness-induced downward causation.

In ordinary dreams, the dream people we interact with are very likely projections of our own unconscious, even when we dream about people who physically exist. They are dissociated constructs emanating from a unitary source the dreaming self belongs to as well. But it is unaware of this unitary source and connection with other dream elements. The dream people are composed of dream matter we perceive as such "from across the dissociative boundary," as Bernardo Kastrup put it in his analogy of dissociative identity disorder (DID). But in shared dreams, seemingly independent elements enter our dreamlife, and we begin to create a shared reality.

Taking this view as a vantage point for further speculations also opens up interesting perspectives on the amazing fine-tuning of the universe. It is well known that many parameters of very different kinds must complement each other in an extraordinarily complex and precisely coordinated manner to make a stable universe and life in this universe possible. This includes the precise magnitudes of natural forces, the masses of subatomic "particles", several "natural constants", and much more (Barrow & Tipler, 1986; Denton, 2002; Lewis & Barnes, 2016).

But rather than seeing the extraordinary orchestration of all these parameters as a purposeful act of an intelligent planner and designer who carefully gauged and adjusted them at the hypothetical beginning of the universe (Meyer, 2022), as an output of a transcendental computer (as in Duan's theory), or as the interplay of conscious CUs (as in Faggin's theory), or CAs (as in Hoffman's theory) who jointly

create increasingly complex structures, it might be more appropriate to endorse the opposite view:

Because we live in a relatively stable and shared (dream) universe, the parameters we can analyze on the epistemic level must *necessarily* fit together in exactly this way. Otherwise, stable life would not be possible in the manner it apparently is. The entire epistemic universe might be the result of a consciousness-related holistic process of downward causation mirroring processes in the ontic domain. The mode of upward efficient causation is only the lowest and most primitive way of mediating change, particularly regarding the behavior of inanimate matter. This is the essence of Adolf Meyer-Abich's idea of holism.

In fact, this holistic mode of functioning is precisely what we observe in the generation of hypnotically-induced blisters, stigmata, or allergies: The mental suggestion to produce these effects is sufficient to produce them. We do not need to know how to coordinate and fine-tune the highly complex spatial and temporal interplay of the millions of molecules that bring about these somatic changes. In case of stigmata, hypnotic suggestions can even lead to physical lesions of the skin and bleeding from the eyes (Lechler, 1933). These phenomena automatically objectify according to a superordinate holistic impulse mediated via the ontic domain.

Similarly, this holistic mode of functioning may find suitable outlets for expressing blocked emotions such as psychosomatic symptoms, instances of synchronicity, crisis telepathy, poltergeist phenomena or other occurrences of macro-PK. All these phenomena can be regarded as a continuum. Because they originate directly in the ontic domain, they are not dependent on additional external energy drawn from the epistemic domain. The law of conservation of energy may well exist only

for closed physical systems.[25] As illustrated in Figure 9, there is no need to postulate a causally closed universe and an immutable amount of energy.

In a reality perceived this way, incidences of levitation, apports and deports can naturally occur in our epistemic domain. And as suggested by philosopher Stephen C. Braude, quantum physical changes occurring during macro-PK might be mere subordinate by-products of changes on the observable level rather than the reverse (Braude, 1997).

I confess that this sketch of possible pathways for understanding extended concepts of causation in the context of NLC phenomena is unduly short. I am aware it requires much more detailed elaborations and addressing of some problematic issues raised in it, such as the origins of individual subjective awareness and the effects of drugs and injuries of the brain on the mind. A full discussion of such matters is beyond the scope of the present treatise, but I might address them in future.

As mentioned, the Schopenhauer conjecture in its original form represents an objective idealist approach, although it is also compatible with hybrid monisms. It can be elaborated further into a model endorsing relative dualism. It is compatible with panpsychism, cosmopsychism, and also animism. It is a decidedly holistic approach that stretches in a hierarchically-nested manner from mind to life to matter on the lowest level, entailing appropriate means of causation depending on the context. Regarding the biological level, it implies vitalism.

In addition, the Schopenhauer conjecture is well in line with reports of profound and high-grade mystical experiences: They all agree that human beings *can* awake from the dream of everyday life and all its epistemic features (including quantum physics).

[25] In other words: Assuming that not even time and space as we know them exist in the ontic domain, why should the law of conservation of energy?

In essence, the entire universe can be seen as a "catalytic exteriorization" or a manifestation of "unconsciously expressive behavior" of the spiritual ontic will that strives for enhanced self-knowing. This offers an explanation for why our waking life is so stable: The evolution of self-knowing is most possible in a relatively stable epistemic universe that is inhabited by a variety of individual sentient beings equipped with increasingly sophisticated filters – or rather lenses – that elucidate and mirror different possible features of this will.

This view is also in line with those of Carl du Prel and Frederic Myers, and the concept of "evolutionary panentheism" elaborated by Edward F. Kelly and his collaborators in several publications (Kelly et al., 2007, 2015; Kelly & Marshall, 2021). However, from the perspective of this kind of downward causation, we might add a complementary aspect to this notion: What appears as evolution to us on the epistemic level might simultaneously constitute an *involution* into our world; the increasingly complex objectivation of mind-related features originating in the ontic domain and its arcane nexus.

7 Future Perspectives

7.1 Possible Tests to Refine Theories of NLC

In the preceding chapters, I reviewed and analyzed various existing theories of NLC and added some of my own considerations, in particular regarding some core tenets of Schopenhauer's philosophy. In this final chapter, I will address more practical and forward-looking topics. Are there specific features of theories that can be tested in order to advance theories of NLC? I think there are.

In this respect, I consider work with gifted individuals to be the best strategy. The conducting of studies which draw samples from the general population is less informative because most of these people will not be able to elicit noteworthy NLC phenomena on purpose. This results in the well-known difficulty obtaining statistically robust and replicable results. Moreover, applying the correct methodological design and statistical analyses to such experiments is crucial, as not doing so may lead to uncertainties regarding the appropriateness of a given employed method. And even if statistically-significant results have definitely been obtained, it is often difficult to ascertain which kind of psi effect created these effects (e.g., clairvoyance, precognition, or micro-PK), or who was responsible for eliciting them (the test subjects or the researchers).

As a result, many NLC researchers engage in sophisticated discussions about these matters. These discussions are fascinating in their own right and contribute very importantly to refining methodological and statistical approaches to assessing features of NLC manifestations among the general population.

But this approach is not particularly suited for advancing theories about NLC in a more general sense, i.e. to assess and refine theories concerned with NDEs, OBEs, CORT, shared dreams and macro-PK. Although working with gifted individuals comprises numerous challenges of its own, it holds more potential for refining and deepening our understanding of the *modus operandi* of NLC. In good cases of CORT, shared dreams, or macro-PK, for example, it is clear whether the subjects

or the researchers had been responsible for the NLC phenomenon in question, and an incident of macro-PK obviously cannot be mistaken for clairvoyance.

In ideal cases, gifted individuals are even able to produce replicable phenomena. The collection of abstracts of papers presented at the 2024 Parapsychological Association convention alone contains reports of a number of encouraging studies with gifted subjects. Some researchers reported successful results with children who were able to "see" while completely blindfolded and controlled in additional ways (Bar et al., 2024). Others documented repeated occurrences of apparent macro-PK under reasonably controlled conditions (Dullin et al., 2024); positive results from an ESP experiment with a "high performing psi participant" (Acunzo et al., 2024); and repeated increases of photon emissions from healers during focused energy healing sessions (Kruth, 2024).

Therefore, beating the bushes for more candidates could be worthwhile, for instance via the international "Research Network for the Study of Esoteric Practices" (RENSEP, 2023). One aim of this network is to bring practitioners of esoteric and magical techniques together.[26]

In addition, working with "high performing psi participants" whose NLC access can be enhanced further by the methods developed by Morris Freedman and his team (Freedman et al., 2024) could offer novel possibilities for studying replicable NLC phenomena.

[26] I am skeptical of attempts to study so-called "physical mediums" who 1) insist on working in darkness and at best allow temporary use of dim red light, infra-red recordings, or thermography on their own command, 2) refuse the application of reasonable control conditions, and 3) remain in constant control of all crucial aspects of their sittings. It is very well-known from the history of physical mediumship that mediums working under these conditions are likely to produce phenomena by fraudulent means. Several recent findings demonstrate that this is still true (Juranics, 2024; Nahm, 2014, 2016, 2018, 2023c). If any researchers still deem studying such mediums worthwhile, they need to maintain a particularly critical mind. They must be in full command of all control conditions and utilize well-designed methods to preclude fraud as much as possible – even if that leads to the cessation of the supposed NLC phenomena.

With this in mind, and following Schopenhauer's proposition that we ideally should strive to understand "the most powerful, most significant, and most distinct phenomenon" first before addressing "the weaker and less complete" phenomenon, I think it is most fruitful to assess NLC on the larger scale and scrutinize important basic tenets of theories of NLC. As I see it, there are two crucial questions to be addressed in order to find answers regarding fundamental suppositions concerning NLC functioning:

- Is the NT axiom universally valid?
- Is the idea that consciousness-induced transformation of quantum potentialities to actualities is what generates NLC phenomena universally valid?

I will address these questions and suggest experiments in the following subsection.

Assessing the validity of the NT axiom

In discussing incompatibilities between theories of NLC, I have pointed out that the NT axiom contained in Walter von Lucadou's Model of Pragmatic Information (MPI) is not compatible with many other theories of NLC because it excludes the transmission of information and signals. This implies an important prediction:

> NLC phenomena cannot be replicated reliably under properly controlled conditions. If they could, transmitting information via NLC would be possible, which would violate the NT axiom.

As mentioned, I do not think that the door for signal transfer via NLC is closed. But more importantly, the NT axiom and the postulated non-replicability of NLC phenomena is a feature of the MPI that can be assessed experimentally by working with particularly gifted individuals.

It is in fact obvious that many large-scale NLC phenomena can be replicated (for examples, see Chapter Two). The important question regarding the NT axiom is

whether these replications constitute *exact* replications and the NLC phenomena demonstrated can be interpreted as potential means of information transfer. Hence, prior to potential tests of the NT axiom, researchers would have to *precisely define* essential features of the experimental context:

- What is information, and how is (potential) information transfer defined in the context of a given experiment?
- What exactly is "organizational closure" (an important prerequisite for NLC phenomena in the MPI) in a given experimental context? How is it created, and what constitutes its limits?
- What counts as a successful replication of an experiment?
- How many successful replications must be accomplished before the NT axiom can be regarded as falsified?

To my knowledge, no such well-defined test of the NT axiom with gifted subjects has yet been performed. Finding suitable individuals for such experiments may not be easy, but the example experiments listed above suggest that it is possible.

For example, the work with children who were able to "see" while blindfolded may provide such an opportunity (Bar et al., 2024). This kind of "direct vision", i.e. seeing without using the physical eyes, has been reported in many different contexts since the times of animal magnetism when several researchers experimented with gifted individuals who could apparently read text held above their abdomens ("stomach seeing", Petetin, 1808). Some authors even reported having developed training methods for enabling direct vision in blind people (e.g., Hopkins, 1988).

Thus, in theory, direct vision offers comparably simple opportunities for experiments on NLC. Possible tests range from detecting the color of two different objects to reading printed (and thus, information-rich) text while blindfolded and having received vision-blurring eye drops, as it has apparently been accomplished already in tests with Indian psychic claimant Kuda Bux (Hopkins, 1988) and

Mexican children (Bar et al., 2024). Ideally such experiments should use randomized and blinded procedures (see also Gomez-Marin, 2023).

A test subject's ability to read text under experimental conditions described above in a predefined number of tests would provide evidence that the NT axiom can be violated.

Similar tests under appropriate previously-defined experimental conditions could be performed with gifted individuals as described by Dullin et al. (2024) and Acunzo et al. (2024) – and if one is willing to regard the photon emissions reported from the test subjects of John Kruth (2024) as genuine psi effects, also with them.

Assessing the significance of quantum potentialities for NLC

Working with gifted individuals could also help in assessing the "potentiality transformation hypothesis", i.e., the hypothesized consciousness-induced transformation of potentialities to actualities as the means that enables NLC phenomena.

If macro-PK is essentially a result of influencing quantum states, gifted subjects who are able to purposefully induce macro-PK (Dullin et al., 2024; Gimeno & Burgo, 2017; Varvoglis & Dullin, 2023) should in principle be able to affect quantum states in a more direct and general sense as well. One should expect that individuals with privileged access to the quantum realm perform exceedingly well in NLC experiments that explicitly rely on turning quantum potentials into actualities (e.g., Milojevic & Elliott, 2023).

However, if these individuals perform much better in macro-PK tasks than in micro-PK tasks, this would be an indication that affecting quantum potentials is not decisive in achieving macro-PK. It would favor a more holistic mode of influence on the macroscopic scale via the ontic domain as suggested by the Schopenhauer conjecture and synchronicity-based theories.

Results of such comparative experiments are likely to be influenced by psychological factors as well. Individuals who are practiced in and accustomed to influencing the behavior of macroscopic objects may find this easier than influencing quantum systems. But this might not be too important, and the overall rationale of such experiments is clear.

As a first step, the relevance of the quantum Zeno effect for NLC could be tested. In quantum physics, this effect is the slowing down or "freezing" of the transformation of quantum potentialities into actualities. In quantum theory, this includes the slowing down or freezing processes of radioactive decay. Therefore, one could test whether gifted subjects are capable not only of decelerating radioactive decay processes, but also of *accelerating* them. In fact, such experiments have been performed.

In 1965, researchers reported that two of seven test persons (children and adolescents) were able to accelerate *and* decelerate radioactive decay processes in a direct manner, choosing which by their intentions (Chauvin & Genthon, 1965). Most later experiments with REGs have used different and more sophisticated technical approaches and have not focused on working with gifted individuals. But such simple experiments could be repeated following modern standards of science. In general, consciousness-induced acceleration of the transition of potentialities to actualities appears difficult to reconcile with the quantum Zeno effect. Rather, one would have to invoke the quantum *anti*-Zeno effect.

In this respect, related experiments in which Geiger counters (devices that count events of radioactive decay in the environment) have been employed are of interest. Physicists John Taylor (1975) and John Hasted (1981) tested whether psychic claimant Uri Geller could influence the output of Geiger counters. In both experiments, the devices showed massive increases in the rate of radioactive decay. In Taylor's case, an increase from two counts per second under normal conditions to thousand counts per second while Geller was focusing his intention was recorded – an amount of radioactivity that is injurious to health.

Provided no trickery was involved (Hasted, at least, made sure that Geller carried no radioactive source with him), there are two main ways of interpreting these results: First, gifted individuals can indeed accelerate and enhance the transformation of quantum potentialities into actualities in a direct manner. In these experiments, however, Geller would have had to exert a considerable quantum anti-Zeno effect, not the habitual Zeno effect that is usually invoked in theories of NLC.

Second, the recorded results had nothing to do with radioactive particle decay. In fact, both researchers concluded for several reasons that the results obtained had been caused by anomalous electric currents that disturbed the radiation detectors and only *simulated* increased radioactive decay.

The experiments described above provide no evidence that the quantum Zeno effect plays a significant and direct role in the realization of NLC phenomena. But because they have been performed under less-than-optimal control conditions, replications conducted in appropriate settings appear worthwhile and advisable.

Assessing externalist facets of NLC

The externalist facet of NLC phenomena has been largely neglected in recent decades, but it played an important role in 19th-century theories of NLC. Currently it has at least been addressed by Rupert Sheldrake, for example, in his work on detecting phantom limbs and the direction from which people stare at others from behind. However, although Sheldrake offered arguments that render "conventional" ESP explanations for the directional sense of being stared at unlikely (Sheldrake & Smart, 2023), I still think it is theoretically possible to attribute it to some form of telepathy or clairvoyance.

In order to find out more about a potential externalist component of NLC, one could try to measure biophysical parameters directly. For example, John Kruth and his team have repeatedly measured increased photon emissions from test subjects

in focused states of mind (Joines et al., 2012; Kruth, 2024). For a start, it would be interesting to assess whether gifted individuals can emit such photons purposefully from particular body parts and/or send them in specific directions.

Likewise, the relationship between NLC phenomena and electromagnetism is not at all clear and could be investigated further. Though it is clear that NLC itself does not rely on electromagnetism, it is nevertheless astonishing that some individuals can produce significant and seemingly inexplicable electromagnetic effects, for example, with their hands (e.g., Harnack, 1905; Hasted, 1981; Nahm, 2012a; Varvoglis & Dullin, 2023).

Given that these individuals can tamper with electromagnetism, one of the fundamental immaterial forces of nature, it would not come as a complete surprise if some are also able to tamper with another immaterial natural force, gravity, and cause macro-PK and levitations. In this respect, I will briefly mention a little-known theory of NLC advanced by Russian researcher Alexander P. Dubrov. He suggested that when people engage in producing PK-effects such as levitations of objects, they are in fact modulating gravity on a local scale by generating biogravitational fields. This would affect properties of spacetime itself (Dubrov, 1979; Dubrov & Pushkin, 1982).

If one can accept the veracity of reports on the levitations of Joseph of Copertino (1603–1663), Dubrov's theory could provide a starting point for understanding peculiar details of these levitation episodes. According to these reports, Copertino seemed to stick in a kind of "local bubble of space" (Grosso, 2016, p. 183). A counter-gravitational force was apparently not only affecting his body, but also the immediate space around it. It included, for example, his clothes, which remained stiff and uninfluenced either by gravity or by Copertino's movements through the air.

Dubrov (1979) suggested that his hypothesis could be tested by scanning the space in which levitations occur by using radio or laser beams, which, to confirm the

hypothesis, would have to display deviations from their normal behavior in undisturbed space. He had no access to flying friars, of course, but referred to work with Russian gifted individuals such as Ninel Kulagina (Keil et al., 1976; Wehrstein, 2024). Currently, gifted individuals such as those investigated by Eric Dullin and Mario Varvoglis might be suited for such tests (Dullin et al., 2024; Varvoglis & Dullin, 2023).

Should such measurements in the context of induced macro-PK phenomena indeed detect anomalies in space itself, this would indicate that NLC phenomena are woven into the cloth of the epistemic domain in very fundamental ways. Consciousness might be the key to manipulating spacetime itself. These effects would barely be explicable by virtue of the quantum Zeno effect or mere observation alone, but support the Schopenhauer conjecture and synchronicity-based theories.

Researching shared dreams and related experiences

Shared dreams are a sadly neglected field of study, although some authors have recommended performing systematic research on them (Hart, 1965). It would be particularly valuable to develop methods for inducing shared dreams purposefully, as has apparently been done in many esoteric and mystical traditions. The learning of such techniques would most probably take many years of concentrated work and would likely not be realizable for everyone, but identical twins and couples in love as described by Stekel (1918) could be successful much more easily. Shared dreams might also be much more common than assumed (McNamara et al., 2017) and could be found by public surveys.

Researching other related kinds of shared experiences, for example, psychedelic experiences induced by DMT (Philip, 2024), could likewise offer intriguing insights into NLC. In addition to experimental studies, systematic surveys among Indigenous peoples and holders of esoteric traditions to obtain a sound foundation

of humanity's lore about shared dreams and other shared experiences are likewise very important. We should strive to save this unique legacy of our planet's psychonauts from irreversible loss.

Pursuing these lines of research, specifically the analysis of shared experiences in mental realms and their potential blending with our physical space, we might find ourselves on a fascinating journey of endeavor. We might learn that by virtue of an intriguing twist of a hyperdimensional structure of the arcane nexus, the way inward is likewise the way outward. What an intriguing prospect!

7.2 Summary and Conclusion

Coming to a close, I will summarize the main findings of this review and analysis of theories of NLC.

- Theories of NLC are likely as old as mankind. They are a natural part of the worldview of Indigenous societies. The human spirit is thought to be able to experience a non-physical realm of existence that transcends spacetime and is shared with other spiritual human and non-human entities.

- In Asian esoteric traditions, these basic concepts are maintained although many partial aspects had been elaborated upon. The physical world but also mental realms are seen as dream-like manifestations originating from a primordial non-physical background reality. All beings spring forth from this usually imperceptible and non-local realm of existence, which links them to each other and to other aspects of the world, enabling NLC.

I call the collective foundation of existence posited by the traditions mentioned above the *arcane nexus*. The image on the front cover of this essay depicts this primeval source as an undifferentiated luminous core from which different shapes originate and manifest in increasingly solid forms that always remain connected to their origin.

- Many theories of NLC advanced in the 19th century share substantial commonalities with theories from Indigenous societies and Asian esoteric traditions, although they are embedded in a Western frame of thought. The latter is characterized by the "discovery" of the unconscious and attempts to connect these traditions to scientific-research disciplines such as physics, for example, via hyperdimensional models. The theories of Carl du Prel and Frederic W.H. Myers can be regarded as representative of encompassing theories of NLC that covered numerous phenomena and their interpretations.

- After the start of the 20th century, a noteworthy proliferation of increasingly elaborate theories of NLC commenced. Because they often have a specific focus, they can be classified as psychological theories, field theories, hyperdimensional theories, minimalistic theories and non-minimalistic theories that usually rely on the process of turning potentialities on the quantum level into actualities by means of observation. Another set of theories followed from Carl Gustav Jung's concept of "synchronicity," according to which NLC phenomena are direct expressions of processes in the ontic domain.

- Several of these theories can be linked together or subsumed into an overarching framework I call the parapsychological synthesis.

- For example, psychological theories are not bound to particular isms or ontological commitments. Therefore, they are compatible with many other theories. Similarly, theories focusing on the relationship of mind and matter are conceivable in hyperdimensional theories and field theories, while hyperdimensional theories can comprise field theories.

- Several NLC phenomena, in particular CORT including cases of replacement reincarnation, call for theories of NLC that imply a dualist feature, be it substance dualism or relative dualism.

- In this respect, most theorists of NLC have endorsed relative dualism based on objective idealism or hybrid monism.

However, from early on, theories of NLC have been plagued by the problem of causation: How can telepathy and macro-PK happen? How can the mind affect another mind or matter without violating the law of conservation of energy? Some theories attempt to provide solutions to this, either by advancing an interactionist approach in which the observing mind is the causal factor that turns potentialities into actualities, or through a non-dualistic approach in which the problem of causation has essentially been avoided by equating NLC phenomena with synchronicity and labelling them "acausal." Both approaches face difficulties, however, not the least because the origin of the energy underpinning incidences of macro-PK has barely been explicitly addressed.

In order to address this problem, I offered suggestions for advancing theories of NLC. They are based on considerations advanced by Arthur Schopenhauer. Nevertheless, they are well in line with other theories of NLC, in particular synchronicity-based theories. The primary tenet is that concepts of causation such as final causation and wholeness causation need to be introduced into the science of life – and thus also into theories of NLC.

I term these suggestions the "Schopenhauer conjecture." It is this:

1. Natural forces and factors governing the development and behavior of organisms are all expressions of the same non-physical dynamism in the monist ontic domain.

2. Processes of life are objectivations of holistic dynamics in the ontic domain that manifest on the epistemic level by way of final causation.

3. Because factors governing processes of life are akin to natural forces, this manner of final causation does not require additional physical energy to realize its organizational and structuring efficacy on the epistemic level.

Because NLC phenomena belong to the realm of life, they are mediated in basically the same manner. For some, this view of life and NLC phenomena may seem unfamiliar and radical. But in fact, the only novel aspect is its explicit formulation. It still represents a fundamental assumption about the nature of NLC held by humanity since time immemorial: NLC phenomena are manifestations of life rooted behind the scenes of the physical world, in the arcane nexus, and they do not follow the mode of efficient causation that governs the behavior of inanimate matter.

This assumption will certainly be held in future theories of NLC as well. Because NLC phenomena will always continue to occur, it is only a matter of time before most scientists will be able to accept their occurrence and create further theories about them. This may take a very long time, but the time will come.

The theories of NLC that have been put forward so far provide many fascinating approaches already, but of course we have not yet reached the end. The theories of NLC being discussed two hundred years from now will have advanced in many ways beyond today's theories, and who knows where we will stand in two *thousand* years – so long as our planet is still inhabited by human beings.

Carl du Prel was convinced that human evolution is not yet completed. He predicted that the body of epistemic knowledge would continue to grow and our inferences about the ontic domain would become more and more refined. He regarded NLC phenomena occurring in somnambulistic trance as an indicator of what would become possible for humans in future:

> "For humanity results from the abnormal powers of the human psyche the consequence, that these faculties belong to […] the biological future; thus in human nature there lie already veiled indications of the next higher stage of being, and since we cannot suppose that we men are cosmically at the summit of life-forms, it may be further inferred, that wherever the biological process

> may have outstripped the earth's, there are beings having those powers normally, which with us are manifested only in abnormal, more or less morbid, conditions. It is, however, clear that such beings will be better fitted than we to take the initiative in the introduction of a cosmical history. Accordingly, it would not be we who would send the Columbus, but he would land, as it were, among us." (du Prel, 1889, vol. 2, pp. 285f)

Judging by this statement, I can well imagine that du Prel would eagerly follow the current developments in UAP research if he could, especially with regard to the parallels between NLC and UAP phenomena, and the naturally-following potential avenues of future research that are already feasible (Nahm, 2023b).

In this respect, physicist Jacques Vallée, who has pointed out the similarities between NLC and UAP in several publications, emphasized that researchers need to be bold and develop their own research strategies. Considering the peculiar features of NLC phenomena, such as their elusiveness and notorious dodging of the usual laws of efficient causation, he recommended getting rid of "mainstream envy", saying:

> "Psi research has a unique place in science: It should not beg for recognition from physics. Psi research should lead, not follow." (Vallée, 2018)

I agree and add only that NLC researchers should also not beg for recognition from mainstream biology. They might be waiting for a very long time. Rather, as Jule Eisenbud, Stephen Braude and many others have also emphasized, they need to be bold, developing and pursuing their own ways of research. They should lead, not follow.

Should my essay contribute to stimulating the development of respective approaches, it has served its purpose.

8 Select Subject Index

The page numbers refer to the introduction and explanation of the listed terms.

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