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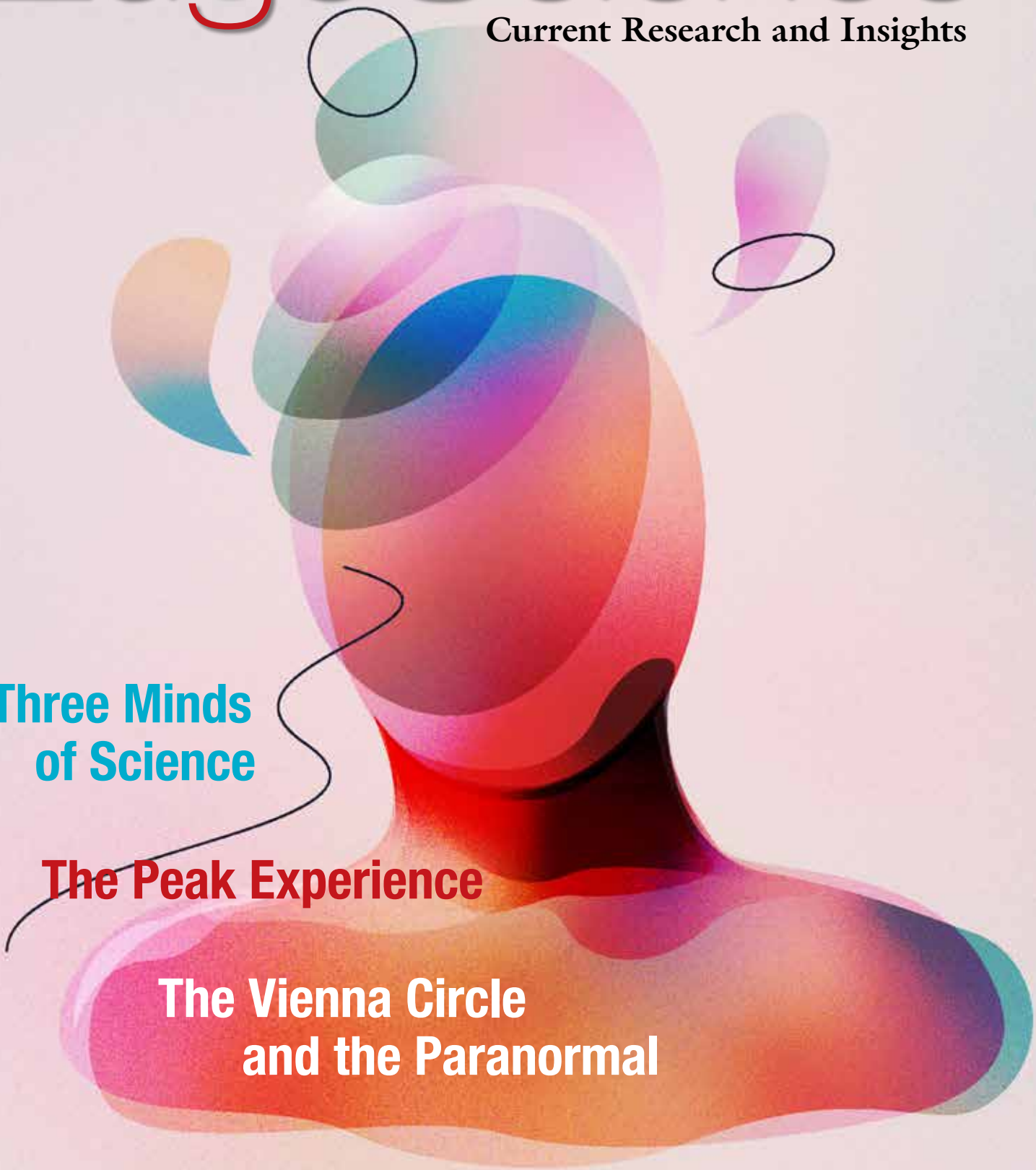

Three Minds of Science

The Peak Experience

The Vienna Circle and the Paranormal

A publication of the Society for Scientific Exploration

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Why EdgeScience? Because, contrary to public perception, scientific knowledge is still full of unknowns. What remains to be discovered—what we don't know—very likely dwarfs what we do know. And what we think we know may not be entirely correct or fully understood. Anomalies, which researchers tend to sweep under the rug, should be actively pursued as clues to potential breakthroughs and new directions in science.

The Society for Scientific Exploration (SSE) is a professional organization of scientists and scholars who study unusual and unexplained phenomena. The primary goal of the Society is to provide a professional forum for presentations, criticism, and debate concerning topics which are for various reasons ignored or studied inadequately within mainstream science. A secondary goal is to promote improved understanding of those factors that unnecessarily limit the scope of scientific inquiry, such as sociological constraints, restrictive world views, hidden theoretical assumptions, and the temptation to convert prevailing theory into prevailing dogma. Topics under investigation cover a wide spectrum. At one end are apparent anomalies in well established disciplines. At the other, we find paradoxical phenomena that belong to no established discipline and therefore may offer the greatest potential for scientific advance and the expansion of human knowledge. The SSE was founded in 1982 and has approximately 800 members in 45 countries worldwide. The Society also publishes the peer-reviewed *Journal of Scientific Exploration,* and holds annual meetings in the U.S. and biennial meetings in Europe. Associate and student memberships are available to the public. To join the Society, or for more information, visit the website at scientificexploration.org.

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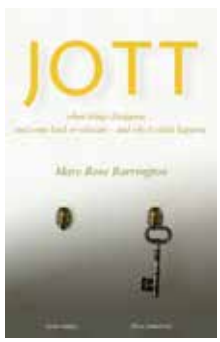

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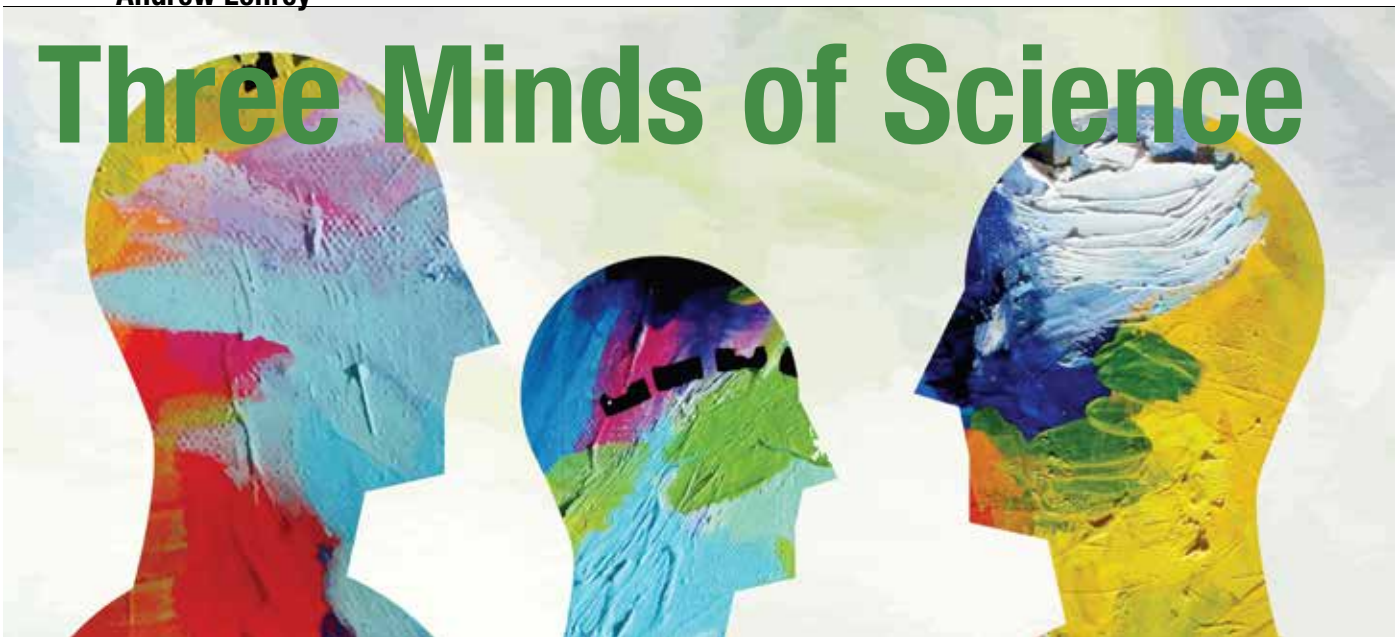
Andrew Lohrey

Three Minds of Science



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There is a painting by the Belgium surrealist painter, René Magritte that shows an ordinary European smoking pipe and underneath is written in French: "Ceci n'est pas une pipe" ("This is not a pipe"). The philosopher and social critic Michel Foucault was so impressed with the contradictions in the painting that he wrote a small book about it (Foucault, 1982). Magritte's painting suggests a great deal about the multi-level nature of language, but it also illustrates how language has reflexivity, that is, it is self-referencing.

Some sentences self-refer in explicit ways: *this sentence is made up of eight words.* However, some self-referencing produces paradoxes such as *I am lying.* In addition, words are arbitrary social systems by which we map other territories, which we may then identify as a single closed system. Magritte's painting challenges the circular identification of map and territory with: *this is not a pipe.* Our retort could well be: *correct! "this" is a pronoun.* In her book *Reflexivity*, Hilary Lawson discusses this self-referral structure of language. The meanings that language carry also self-refer (Lohrey, 2018), while Arthur Young (1999) argued that the universe itself is self-reflexive.

Together, language and meaning create a powerful self-referencing influence that is part of every expression. This force can show up in the writing style and content of every author. During the 1990s I worked as an applied linguist with the New South Wales Legal Aid Commission on a series of serious crime cases. Many of these involved analyzing the Record of Interview at that time written down by an investigating police officer. What I was looking for in the Record of Interview was evidence of two authors. An admission of guilt that was not in the writing style of the accused indicated fabricated evidence. This kind of linguistic analysis was easier when the accused had English as a second language and then differences in authorship were easier to note. What made these analyses inherently difficult is the social character of language with its rules of grammar and syntax that exert a common sentence structure on individual styles.

A similar approach can be adopted in relation to the discourses of science. In this case the purpose would not be to identify the author who is already accurately identified, but to identify the assumed model of mind that is embedded in the scientific discourse. Why would I do this? Because the reflexivity of language and meaning tells us that every text, scientific or otherwise, will implicitly or explicitly contain some model of the self that the author(s) have privileged. How we think of ourselves is usually stereotypical, and this is because language is essentially social and so we often assume a stereotypical model of self that is taken for granted. For example, some version of the human self attends every interpretation of quantum mechanics (QM) as well as Albert Einstein's theories of relativity. This is generally an Enlightenment mind that is awake, rational, logical, intelligent and has freedom of choice, and the ability to discern differences and see separations.

Conventionally, physicists have not accounted for language, meaning, or mind in their theories or experiments. What these three have in common is reflexivity, which is the key self-referencing component of each. Reflexivity is a circular movement of meaning. In the past circularity has had a bad press. An argument that is circular is commonly seen to add nothing new, or worse, to be false. Whatever the criticism of circularity, reflexivity is a key aspect of language, meaning, and mind, and those scientific discourses that erase or ignore these important features present an incomplete picture of reality.

The second feature of language that is relevant to this discussion of completeness is the understanding we have of the role of language. This issue is directly relevant to the conventional scientific belief in the possibility of attaining certain knowledge by scientific means. Yet when scientific practices do not take language into account, the uncertain influences of vocabulary are erased. With the advent of quantum mechanics uncertainty became an essential feature of doing science. The uncertainty principle of QM reflects to a degree the necessary

uncertainty within language. Hence, if uncertainty has become an inbuilt feature of language and also of doing science, how should it be treated?

One direct method is to look at the type of influences generated by language. Every discourse, whether scientific or everyday, carries both implicit and explicit meanings that are part of an entangled field of social and historical implications. Explicit meaning reveals details, differences, and distinctions, while implicit meaning creates links, connections, unities, and wholes, and is the hidden content of every context. This revealing and concealing process may seem contradictory, yet it occurs whenever we speak, write, and use symbols to communicate. Every scientific theory or interpretation is constructed from these contradictory effects of language, which make it impossible to express a complete, concise, clear, and certain statement without some ambiguity or uncertainty. This inherent uncertainty of language tells us that every scientific theory will never be closed or complete in itself but rather is always open to further interpretation and modification.

The only time we think we are able to produce certainty in language is when we employ the "sleep" of single meaning. The fiction of single meaning can be generated from categorical or axiomatic statements or when in everyday discourse we use of the verb "to be" to describe others or our self. However, in every case when the desire for a single, unambiguous meaning is uppermost in the individual's mind, the discourses used will be fraudulent to the degree the English poet William Blake described in his famous verse, of which the last two lines are: *May God us keep/From single vision and Newton's sleep.*

The sleep of single meaning occurs because our discourses fail to account for the natural reflexivity and uncertainty of language. In general, the sleep of single meaning happens when we ignore these inherent contradictions and assume language is like a mirror that can simply reflect with certainty every element of physical reality. This simplistic view of language is apparent in the text of the paper that became known as the EPR paradox. On May 15, 1935, the *Physical Review* published what became the famous EPR paradox. It was a paper by A. Einstein, B. Podolsky, and N. Rosen and titled, "Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?" It raised a philosophical question concerning the nature of physical reality by suggesting that the current Copenhagen interpretation of QM proposed by Niels Bohr and Werner Heisenberg was incomplete.

The paper stated that it was not interested in exploring a comprehensive definition of reality but only the necessity that "every element of the physical reality must have a counterpart in the physical theory." This definition of completeness rested on the fiction that language was mirror-like; that there were distinct elements of physical reality which could be identified within a local space/time continuum and that these elements of physical reality should have a counterpart in the language of the Copenhagen interpretation of QM.


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PHYSICAL REVIEW

In other words, the EPR paper assumed that completeness rested on a language map that could exactly copy the observed details of physical reality. This naïve belief in the mirror of language also assumed that a series of single meanings could directly connect the language maps used in the Copenhagen interpretation of QM with every physical detail of QM experiments, including measurements. Yet single meanings that are devoid of self-reflexivity whether in science or everyday life are a fiction.

There is a widespread complacency in physics about the important role played by language, meaning, and the human mind in every theory and experiment. It is suggested here that in order to achieve a more complete picture of reality, one that includes the reflexivity of the human mind, physics needs to take into account the reflexivity of language and mind. Such inclusions are essential because there is no scientific discourse, interpretation, or experiment dealing with any aspect of the physical world that does not implicitly include some model of the human mind. This is the case because the language and meaning that structures all theories and interpretations will of necessity reflect some implicit or explicit model of mind that the author has privileged.

By reviewing some classic scientific literature, we find evidence of at least three stereotypical models of the human mind. These three models I call the No Mind, the Ideal Mind, and the Materialist Mind. These three models are not separate categories but overlap each other in that the No Mind and the Ideal Mind represent latent implications of the explicit Materialist Mind.

1: The no-mind mind amounts to a denial that scientists have minds that are embedded within the theories and interpretations they express. The "no-mind mind" is an essential part of the "objective" viewpoint. This is a surreal, Magritte model of mind that contains the direct denial of mind by a mind, while also denying the reflexivity of language and meaning. These denials have their foundational support within the cultural fiction of "objectivity" and the metaphysics of local realism.

Local realism is a dualistic framework in which the physical world has the status of objectivity because it is seen to be independent and separate from the subjective minds of observers. The local feature of this framework states that objects of the physical world are only affected by their immediate environment to the extent that no object can travel faster than the speed of light. The kind of mind that is generated from the fiction of objectivity and the metaphysics of local realism is the no-mind mind. With this kind of mind, we can have an objective viewpoint, which is a viewpoint that is separate and independent from the mind that expresses it. Such is the surreal non-mind mind.

This bizarre model of mind carries over into a restricted view of knowledge. The principles of local realism characterize knowledge in terms of explicit quantities with values that can be predicted with certainty. Explicit knowledge is assumed to have no theoretical limits and is only limited by crude or underdeveloped technology. Thomas Nagel, (2012, 7) refers to the no-mind discourses of science this way: "The great advances in the physical and biological sciences were made possible by excluding the mind from the physical world." Nagel goes on

to say that, "at some point it will be necessary to make a new start on a more comprehensive understanding that includes the mind." That new start must begin from an appropriate critical assessment of the interpretative limitations imposed on scientific discourses by these three fictional models of mind.

2: The unofficial ideal mind of science. While the no-mind discourse produces the surrealism of a mind that says it is not, the unofficial mind of science is represented by how scientists often like to see themselves and also how they refer to each other when discussing common problems. An example of this is how the authors of the EPR paper have assumed an ideal model of the scientific mind. This is a mind that is awake, rational, logical, and intelligent, that has freedom of choice and the ability to discern differences and see separations. In that paper the human mind is not addressed directly, and no psychology is referred to or applied. Nevertheless, the ideal rational mind is operating within its proposals and relates directly to what is considered to be a complete interpretation. The strong influence of this ideal mind is seen throughout the paper and with a direct appeal to reason expressed in the penultimate paragraph: "No reasonable definition of reality could be expected to permit this." The architecture of the unofficial ideal mind of science underpinning the EPR paper leads on to the next model of mind.

3: The official materialist view of the human mind. The official view of mind comes from the framework of local realism with its dualism of an unreliable subject offset against the real and substantial quantities of an independent physical world. The materialism of this pair is often expressed in terms of, "objectivity" versus "subjectivity," while its dualistic structure is found in Einstein's theories of relativity as well as in most interpretations of QM. However, the inherent dualisms of subject versus object are rarely treated equally. Local realists tell us that the observer is always a separate and local subjectivity and, therefore, a minor or unreliable element in comparison to the substantial, real, and independent physical world.

A further implication that flows from this dualism is the dualism of the irrational versus the rational. This division usually aligns with gender differences although most civilized men of science would deny that they would equate women with irrationality and men with rationality. However, since the first Nobel Prize was awarded in 1901 women have won it 49 times, men 825 times, and when comparing women with men the former has received the honor 5.5% of the time. In physics the percentage of women who have won the Nobel Prize since 1901 is 1%. What do these figures suggest about the official view of the human mind?

Each of these three simplistic models of mind have common exclusions that come from the framework of local realism and which deny the actuality of reflexivity and, thereby, a more complete model of mind. In addition, the limited nature of these three models is reflected in the popular cultural category that can be called a folk concept of mind. A folk concept of mind is common to those folks who never question the nature of their own mind, nor explore the subject matter of language, meaning, or mind. Under this reductive regime even the qualities of mind can be made to seem like quantities. The observer, for example, often assumes the status of a quantity, that is, the observer simply becomes a figure within a statistical calculation, rather than a dynamic context.

The folk concept of mind is not limited to scientists for it represents a central feature of a globalized dogma called: *the doctrine of many separate local minds.* The general result of this doctrine is to limit the extent of the human mind to a separate island of consciousness, separate from its environment, and separate from other minds. This alienated mind is local in its nature and as such it is located in the body, which automatically deletes any possibility of a broader field of consciousness outside the body. This local realist view is reinforced by its aim of finding certain knowledge through valuing explicit quantities. Under these restricted conditions the human mind becomes a separate entity that is commonly called an "identity."

There are many versions of this false doctrine, from ego psychology to globalized *laissez faire* economics to the cult of individualism to the belief that there is no such thing as society to the conviction held in physics, biology, psychology, medicine, and neuroscience that the brain creates the individual's mind. Whatever form these versions take, they all agree on the central idea that the individual has a private and separate identity (mind) that is essentially local in nature and separate from other minds, and also, for most scientists, independent of the objective physical world.

It should be noted that there is no actual scientific evidence that supports this folk concept of many separate, local minds, or for that matter the three minds referred to above. All the experiments of classical physics, as well as Einstein's theories of relativity, do not uncover evidence that supports the hypothesis of separate, local observers. This is because most physicists have already assumed that the fiction of separate, local and private observers is real.

This lack of evidence supporting these folk concepts contrasts with the experimental results of quantum mechanics as well as the large body of Indian philosophy that has argued over several thousand years for a universal, non-local consciousness. The lack of evidence for a local, isolated mind also contrasts to the growing body of Western research into non-local consciousness (Goswami, 1995; Radin, 2006; Jahn & Dunn 2011; Dossey, 3013; and Lohrey, 2018). This body of philosophical and scientific evidence finds support for a non-local, infinite, unitary consciousness in which each individual mind is a local part. This holistic model is far more complete and satisfying than any of the three models of mind conventionally used in scientific discourses.

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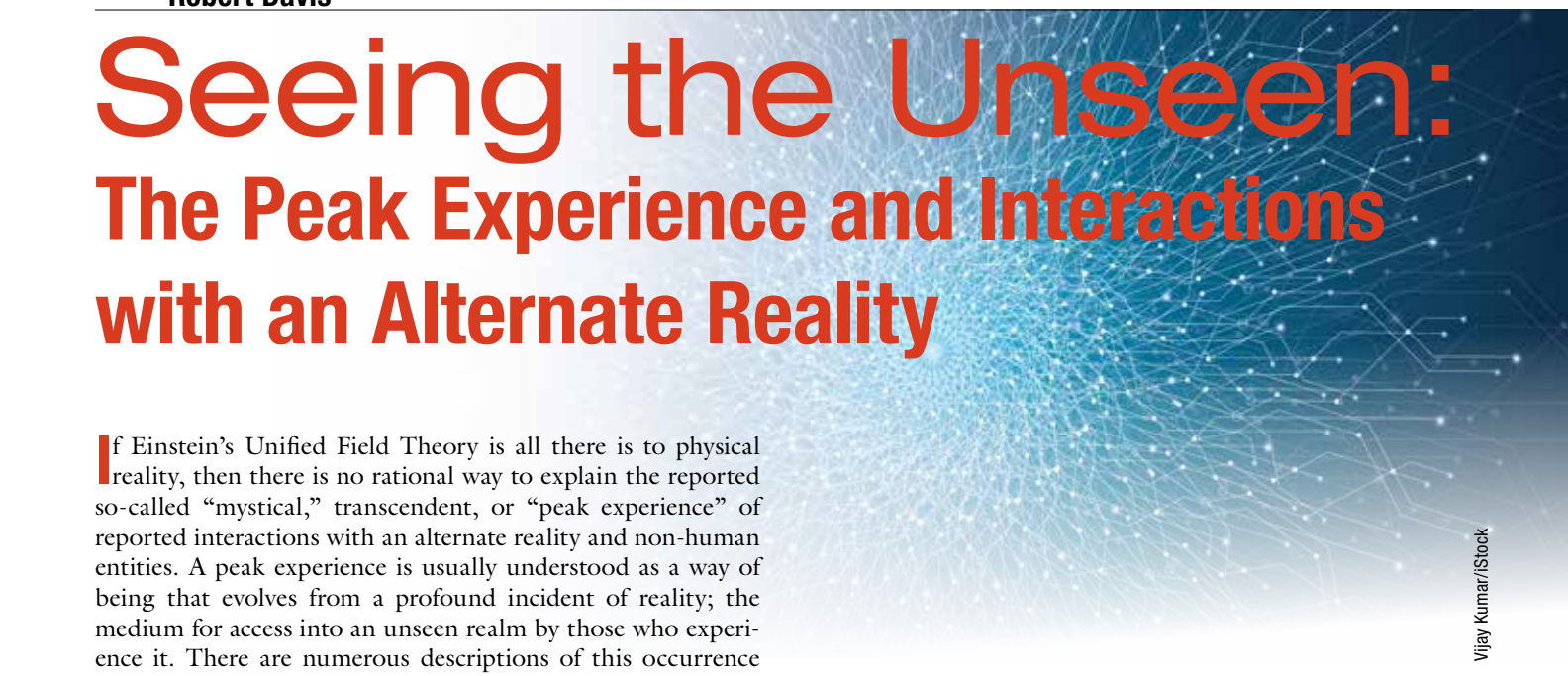
(continued on page 11)

Robert Davis

Seeing the Unseen:
The Peak Experience and Interactions with an Alternate Reality



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If Einstein's Unified Field Theory is all there is to physical reality, then there is no rational way to explain the reported so-called "mystical," transcendent, or "peak experience" of reported interactions with an alternate reality and non-human entities. A peak experience is usually understood as a way of being that evolves from a profound incident of reality; the medium for access into an unseen realm by those who experience it. There are numerous descriptions of this occurrence in religions which agree it is a direct experience of reality that transcends the separation of mind and body, and the separation of self and reality. The peak experience may all be spokes of the same wheel despite being generated by different trigger events, including the near-death experience, the out-of-body experience, and hallucinogenic experiences from psychoactive drugs, hypnosis, and meditation.

The altered state of consciousness reported by peak experiencers is generally characterized by perceptions of oneness with the universe, ineffable emotions, alterations of time and/or space, insight and wisdom, visionary encounters, and communication with a Supreme Being, the deceased, and/or non-human entities. Carl Jung, who founded analytical psychology, termed these beings "archetypes"—a form of symbolic reality of images and dreams that interact with humans on a subconscious level.[1] The peak experience may also include the feeling of one's consciousness separating from the body, telepathic communication, an increase in intuitive and psychic capabilities, and the sense that reality is a manifestation of a universal energy. The detailed accounts by millions worldwide who contend to have had a peak experience are extraordinarily similar. But is it a normal innate tendency or an illusion created by the mind?

Over the past decade, the self-transcendent experience or peak experience has been the focus of increasing research interest. Researchers in the neurosciences, physics, and philosophy are trying to better understand the concepts of one's spirituality and "sensation of the mystical" or the surreal, and how it may interact with the physical laws of nature, the brain, and "consciousness." And this objective makes sense since it can have a profound effect on the psychological health of those who experience it. In general, those who report to have had a peak experience believe it facilitated dramatic changes in their personal and philosophical viewpoints on life, love, death, and spirituality. As one typical peak experiencer related: "My NDE was the best experience of my life, and absolutely shaped me in a profound and positive way. I can only say it is real reality."[2] But while national surveys show that approximately 30 to 50 percent of Americans claim to have had a peak experience in the form of a mystical or transcendent experience,"[3] few empirical studies have investigated the nature and validity of the peak experiencers' reported interactions with an alternate reality or non-human entities.

The Peak Experience: A Window to an Alternate Reality?

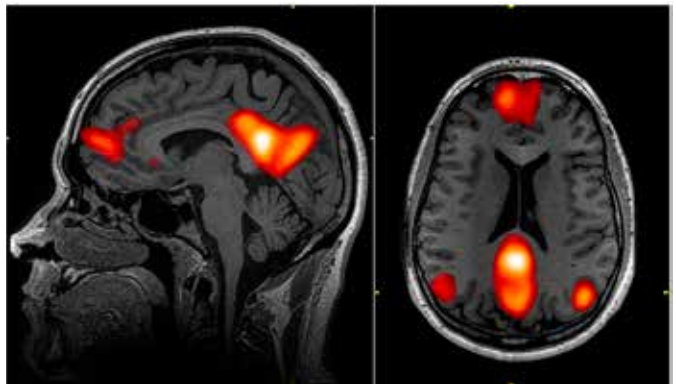
Are some individuals actually "seeing a different world," or are they instead, "seeing this world differently" in a non-spatial/non-temporal context? For the most part, Western science generally considers the peak experience's surreal perceptual content a manifestation of a psychological or neurobiological abnormality—a misrepresentation of the actual relationships between one's consciousness and reality, as in dreaming, psychosis and/or a depersonalization reaction to stress, sleep transition disorders, or hallucinations generated when communication between the brain's frontal lobe and sensory cortex is compromised. However, although our brain fails at times to distinguish between a visual or auditory stimulus occurring externally and one generated by our mind, it should not be considered "abnormal" in all cases. After all, scientists, psychologists, philosophers, and theologians often interpret altered states of consciousness differently, and the psychological community has not even developed agreed upon criteria for what constitutes a transcendent experience or peak experience, let alone recognizing it as part of a "normal" psychological state in a well-balanced individual. In fact, there are both unique similarities and differences between psychotic episodes and certain aspects of transcendent experiences.

One important clinical criterion that distinguishes a true peak experience from a psychotic disturbance is the impact of the experience on one's overall wellbeing. The peak experience, for example, generally facilitates positive emotions and behavioral transformations in the form of feelings of joy, serenity, wholeness, and love, which can lead to improvements in psychological health and awareness of the spiritual dimension in life—an expanded consciousness and an awareness of themselves being more than just physical matter. In contrast, psychotic episodes typically generate feelings of confusion, anxiety, and depression, which increasingly isolate the person from society. Consequently, the peak experience may be viewed as healthy growth toward higher states of spiritual awareness—a type of spiritual awakening that does not present symptoms of a psychological disorder.

An altered state of consciousness induced by hallucinogens or meditation may also stimulate specific brain regions, resulting in a broad range of experiences perceived as being "spiritual" in nature, and which yield positive psychological benefits. But despite the apparent absence of a chronic and severe psychological disorder (psychosis, dissociation) in most peak experiencers, an abnormal short-lived and fleeting brain-based hallucination in the form of a perceived peak experience cannot be completely ruled out. After all, realistic illusory perceptions are not uncommon when delicate brain processes are compromised by different externally and internally induced events. The activation of a large network of the parietal system (which integrates sensory information) in the brain, for example, is thought to play a crucial role in both self-transcendence[4] and altered states of consciousness elicited by "life-threatening situations, psychiatric and neurological disorders, and all deep existential crises."[5] Hallucinations are even a common part of the grief reaction, with as many as 70 percent of bereaved individuals experiencing illusions of their deceased loved one.[6]

The peak experience, which may reflect the brain's inability to regulate one's perceived body's relationship to the world and position in space, appears similar to an altered state of consciousness described in the book *A Stroke of Insight* by neuroanatomist Jill Taylor, following damage from a stroke to her brain's left hemisphere.[7] For example, when the brain's right hemisphere was in control during her stroke, Taylor expressed feelings of being "at one with the universe," and of "incredible deep inner peace and contentment."[8] One explanation for both Taylor's altered state, and the documented psychological benefits facilitated by peak experience trigger events may be the associated unitive experience that accompanies it—a symptom of ego-dissolution or a compromised sense of "self."[9] The peak experience and its corresponding sense of unity with reality, therefore, may be allowed for by a change in brain hemisphere activity. Consequently, similar aspects of compromised brain function induced by different trigger events may be responsible for the shared perceptual content of this altered state of consciousness.

Taylor's ego-dissolution or compromised sense of "self" may be supported by neurophysiological evidence of this state-specific altered state. In one study, for example, when meditators reported the exact moment they attained their meditative climax



Magnetic resonance imaging of areas of the brain in the default mode network. John Graner, Neuroimaging Department, Walter Reed National Military Medical Center, Bethesda, MD.

along with a sense of being united with the universe, there was a corresponding decrease in the left hemisphere's orientation centers.[10] Apparently, when one's internal thoughts and the external world subside from either brain damage or peak experience trigger events, the brain's electrical activity reduces and receives decreased input from the sensory systems. This, in turn, causes one to lose sight of one's relative position in space and to experience a sense of oneness and unity. This may explain why Taylor reported that her consciousness shifted from feeling "like a solid," to a perception of "feeling fluid—at one with the universe"—when this region was silenced from her stroke.

This evidence suggests that the brain's default mode network (DMN), which is closely associated with self-referential mental activity during the resting-state, may represent the underlying neurological mediator for peak experience trigger events that evoke feelings of "self-transcendence" or the unitive experience—an inability to differentiate between one's inner self and external reality; an alteration of time and space; a floating sensation; and the sense of an interconnectedness with the universe. Thus, one may perceive things one would otherwise not realize and wrongly interpret it as a mystical-like peak experience and associated interaction with an alternate reality. More specifically, the inhibition of the posterior-superior parietal lobes creates a sensation of "pure space that is subjectively experienced as absolute unity or wholeness and obliteration of the self-other dichotomy."[11] In fact, the neural network properties of the identified "core-self" DMN regions (medial prefrontal cortex, posterior cingulate cortex, and inferior parietal lobe) suggests that the peak experiencer's altered state of consciousness is not an imagined event memory, but rather a real experience despite not actually having been experienced in reality.[12] Consequently, a highly emotional, personally important, and surprising event like the peak experience can result in a preferential encoding that makes peak experience memories feel real, more detailed, and longer-lasting than everyday memories.[13] But whether the peak experience is real or imagined, the magnitude and importance of the peak experience's perceptual and semantic content may explain why it has such a profound impact on the person's core personal viewpoints and values.

Moreover, the unique similarity of reported perceptual and semantic descriptions induced by different peak experience trigger events suggest that these characterizations may actually be facilitated by comparable brain processes. For example, the brain's medial temporal lobe has been identified as the same mechanism responsible for the "complex imagery, entity encounters, and vivid autobiographical recollections" reported in the altered state of consciousness induced by psychoactive drugs, the near death experience,[14] and meditation.[15] Interestingly, when meditators mentally visualize and emotionally connect with encountering a "being of light" typical of a near death experience, high gamma activity (corresponds to a state of enhanced cognitive performance) and other neuroelectric changes are seen to arise from brain regions associated with positive emotions, imagery, attention, and spiritual experiences.[16] These outcomes were also supported in a recent cross-sectional online survey on the prevalence of peak experiences in more than a thousand meditators; a majority of the respondents reported having had anomalous and transcendental experiences similar to those documented in both the near-death and psychedelic altered state of consciousness.[17]

In light of this preliminary evidence, the question remains whether the brain, or an aspect of mind, may be capable of providing us with an enhanced sense of awareness of an alternate and ultimate reality as part of the natural evolution of consciousness in humankind. In other words, like space-time and energy, the act of conscious awareness may represent a yet-to-be discovered fundamental law of the universe that may facilitate greater human potential, perception, and mindfulness. But at this early stage in our embryonic development, our poor understanding of how the brain facilitates one's sense of self and reality make it virtually impossible to firmly conclude that the experience of an alternate reality is either valid or illusory in nature.

The Peak Experience, Parallel Worlds, and the Mind

Some physicists believe there exists strong evidence to support the theories of superstrings, extra-dimensions, and parallel universes. And these theories provide an alternative explanation to psychological and neurobiological-based theories of the peak experience in the form of an ultimate reality. Several complex and exquisite mathematically derived principles, for example, have independently revealed the existence of hidden universes and dimensions beyond the subjective reality we perceive in our everyday waking consciousness that could exist parallel to our universe. Consequently, there may actually be two realities in human experience; one visible and experienced by our senses, and one that is not—an unseen alternate realm of existence. In other words, the peak experience could be either physiological; a common brain event, or non-physiological; the separation of consciousness from the physical body. And this concept should not be entirely dismissed, especially since anecdotal testimony from those who have had a peak experience suggests that the experiencer often returns from an apparent unseen realm with a firm understanding of the interconnectedness of all things.

Subjective depictions that "time and space no longer exist," and that it is possible to "see everything at once" and "through any obstacle and in every detail as a holographic view" also appear to correspond with certain features of evolving scientific principles in quantum mechanics: String Theory, Quantum Hologram, and the Many Interacting Worlds theory. The reported subjective peak experience characteristics, which seem analogous to quantum mechanical principles of time and space, indirectly suggest that quantum theory may provide the conceptual framework for understanding the peak experience. This includes the concepts of non-locality, coherence or interconnectedness, knowledge of existence in another dimension without a body, the perception of time as if the past, present, and future exist simultaneously and instantaneously, and the instantaneous information exchange in a timeless and placeless dimension. In fact, many physicists acknowledge that the universe we live in could be just one of an infinite number of universes making up a "multiverse."[18] And these universes may exist beyond the three dimensions we are familiar with but are hidden from us because they exist in our time and space at a slightly different frequency or phase. Proponents of the Many Interacting Worlds theory, for instance, contend that parallel universes exist and interact through a "universal force of repulsion between 'nearby' similar worlds."[19]

For the peak experience and its associated interaction with an alternate reality to be authentic, an aspect of mind or awareness must behave independently of the brain and somehow extend beyond normal space/time. And principles in quantum mechanics may actually allow for an aspect of one's consciousness to access another parallel time and space via a peak experience. In fact, the possible force governing this behavior may eventually prove to be on par with electromagnetic, gravitational, and the nuclear forces that describe universal reality.

The connection between human consciousness and the physical world is precisely why so many founding fathers of quantum physics were so preoccupied with consciousness and "non-material" science in general. Many eminent physicists, for instance, contend that consciousness does not strictly obey the rules of the physical world. For example, David Bohm agreed that it makes "no sense to separate physical effects from spiritual effects,"[20] and Max Planck regarded "consciousness as fundamental" and matter as "derivative from consciousness." Eugene Wigner also emphasized how "it was not possible to formulate the laws of quantum mechanics in a fully consistent way without reference to consciousness,"[21] and Erwin Schrödinger believed that extrasensory perception could be explained by realizing that our consciousness is immersed in the quantum mechanical wave function which serves as a "field of consciousness" over the Earth.[22]

But just how can consciousness be experienced independently of the body during the peak experience? That is, is consciousness itself a non-local phenomenon? And if it is, then the subjective attributes and content of the peak experience may actually provide the means to help prove or disprove theories of the possible existence of parallel universes, and possibly even consciousness itself. Moreover, certain features of the peak experience appear to have quantum-like holographic properties that correspond with some of the basic principles from quantum theory. Consequently, if certain aspects of sensory

information processing, such as in telepathy and precognition, are in fact "non-local," it may explain the perceptions by peak experiencers that everything in the universe is interconnected and that normal time and space is dramatically altered. Non-local perception, therefore, which appears to function outside normal physical evolutionary processes, may be related to higher unknown aspects of consciousness.

Research Directions

The unique and perplexing subjective characteristics of the peak experience emphasize the need for continued research to determine whether some individuals can actually "see a different world" or instead, to "see the world differently" in a non-spatial/non-temporal context. To prove this theory, the scientific method requires that it be testable, reproducible, and falsifiable. But the peak experience may not be testable, reproducible, and falsifiable in a manner consistent with traditional scientific practice. For example, one major research limitation associated with the peak experience is that it emerges spontaneously, making the study of this state-specific experience very difficult, if not impossible, to conduct in a well-controlled and reliable manner. And this concern is compounded by the lack of agreed upon perceptual and semantic content criteria to accurately distinguish psychologically well-balanced "peak experiencers" from those with psychological disorders for research purposes. Consequently, one major research objective is to develop a reliable and valid standardized behavioral test that incorporates yet-to-be-established criteria to accurately define a "true peak experience." Once defined, the attributes of the peak experience that influence or predict the extent of personal change can then be analyzed to isolate the relative contribution of personal and situational variables, and related interactions, to observed behavioral transformative changes in peak experiencers.

Moreover, future research should focus on the development of a standardized "peak experience model" that reliably generates a predictable altered state of consciousness for experimental purposes. Initially, researchers should attempt to develop this model in advanced meditators and those under the influence of a psychoactive drug like ketamine or DMT. This is an important research objective, especially since the state-specific consciousness in each population appears similar in perceptual and semantic content to all trigger events of the peak experience.[23] Consequently, the development of a reliable "peak experience model" may enable the assessment of real-time changes in neurological activity and associated perceptual content of specific and identifiable peak experiences induced by different trigger events. In turn, the nature of an individual's specific peak experience can then be accurately identified and properly categorized. This preliminary evidence may provide the needed foundation for future research to build upon to help determine if an individual's peak experience is a valid representation of either "seeing a different world" or of "seeing this world differently."

In our still infant evolutionary stage of intellectual and spiritual development, the elusive nature of how the brain facilitates every aspect of one's subjective experience remains a fundamental research objective in neuroscience. The process by which the collective behavior of brain activity translates into the conscious act of thought and emotion will likely remain obscure until physical and/or non-physical processes can, if at all, be associated with the essence of consciousness itself. Only then will we be able to understand the true nature of the peak experience. In fact, the concept of "consciousness" itself is too nebulous, having no unified agreed upon criteria to accurately describe or define. Thus, as we better understand quantum processes, and how they interact with brain matter and the nervous system, we will be in a better position to understand the nature and unimaginable implications and possibilities of our conscious and unconscious mind—the architect of reality.

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OBSERVATORY, continued from page 5

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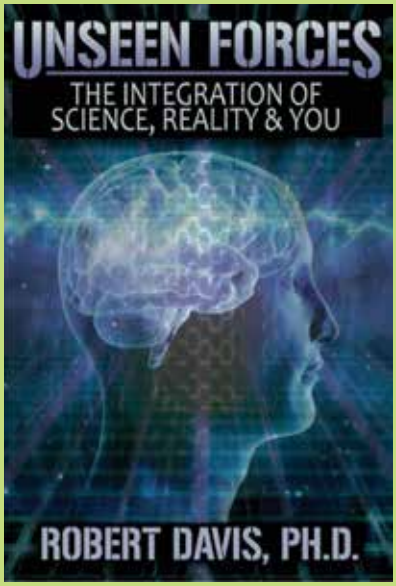
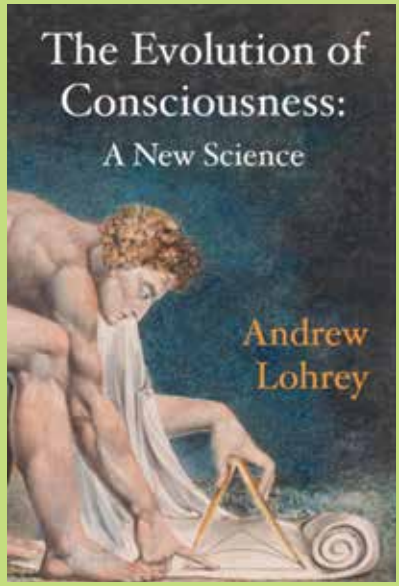
Noteworthy Books



Unseen Forces, Robert Davis, Ph.D.
Visionary Living, 2019

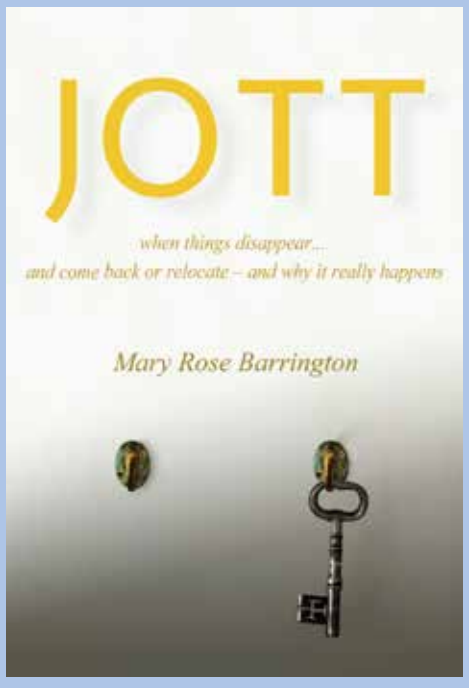


The Evolution of Consciousness: A New Science,
Andrew Lohrey, ICRL Press, 2018

A review by Stephen Braude

A Parapsychological Naturalist

This book accomplishes the nearly miraculous achievement of being both substantive and highly entertaining. According to Barrington, "JOTT," derived from "Just One of Those Things," stands for a kind of "spatial discontinuity" namely, a motley class of events in which objects appear or disappear in mysterious ways. For example, some can be classified as "Walkabouts," in which "an article disappears from the place where it was known to have been and is found in another place." Similarly, in "Comebacks," "a known article disappears from the place where it was known to have been and later is found back in the same place." And in "Turnups," "a known article from an uncertain location appears in a place where it is known not to have been before it was found there." The other primary categories in Barrington's taxonomy are Flyaway, Windfall, and Trade-in (the reader might be able to guess what these are). The central contention of this book is that JOTT phenomena merit the attention of psi researchers and theorists of the paranormal.



JOTT: When Things Disappear... and Come Back or Relocate and Why It Really Happens by Mary Rose Barrington. San Antonio, TX: Anomalist Books, 2018.

I've often lamented that lab research in parapsychology is premature, because we have no decent idea what kind of organic function scientists are trying to investigate under inevitably straitjacketed laboratory conditions. Not only are we ignorant of psi's finer-grained features, we don't even know what its natural history might be—for example, whether it has an evolutionary role or primary or overall purpose or function (although there's no shortage of speculation on these matters). Of course, there's no reason to think that psychic phenomena occur only for parapsychologists, much less only when those parapsychologists set out to look for them. After all, a major motivation for conducting formal studies is that we have evidence of psi occurring spontaneously in life. Moreover, there are good reasons for thinking that psi might be triggered unconsciously or subconsciously, in which case it might also occur surreptitiously. But since we're a very long way from understanding the nature and function of everyday psi, we don't know whether psychic functioning is an ability (like musical ability) or whether it's a brute endowment such as the capacity to see or to move one's limbs. Obviously, then, in the absence of this rudimentary knowledge, we have no idea whether (or to what extent) our experimental procedures are even appropriate to the phenomena. After all, many human capacities or endowments are situation-sensitive and can be evaluated only in real-life

In fact, I suspect that the most valuable attributes a psi researcher can have are those that (ironically) seem to be in short supply in psychology—namely, perceptivity and sensitivity. That's why I've argued that we need fewer lab parapsychologists and more parapsychological naturalists, good observers (like the biological naturalist), who can record and systematize the subtleties of broad ranges of relevant phenomena and behavior. Until we have some sort of empirically justified idea of what psi is doing in the world (and it's no more than a conceit to think we have it now), we don't even know what it is we're looking at in the lab.

Barrington, in her book, plays this crucial role of the parapsychological naturalist, by looking at some unheralded peculiar events and then trying to incorporate them into the big picture. She focuses on a class of ostensibly paranormal phenomena that have received much less attention than, say, cases of apparitions and poltergeists. And she's clear about why that is. The phenomena typically and all too easily get dismissed as merely a nuisance and are readily put out of mind. They're not as dramatic and conspicuous as a table levitation, and we can, without much difficulty, churn out counter-explanations which at least superficially satisfy us, even if they wouldn't withstand greater scrutiny. But, Barrington urges, the best of these cases present real puzzles with serious ontological implications, and they force us to attend more carefully to the many other cases that are less initially compelling. She writes: "…when all

known or imagined forms of eccentric behavior are considered, there remains a hard core of cases that cannot be reasonably explained away in mundane terms, and eventually an attempt must be made to explain them using broader concepts."

So Barrington devotes two chapters (nearly half of the book) to presenting an extensive selection of cases, and then two more chapters in which she tries to place these phenomena in a wider parapsychological and broadly theoretical context, with appropriate emphasis on the connections between JOTT and other examples of ostensible macro PK. In the first of those chapters, Barrington summarizes, rather quickly but thoroughly enough to be useful to parapsychological newcomers, the wide range of both spontaneous and experimental psi phenomena. I especially appreciated the details she offers about some of the more interesting and dramatic examples of spontaneous PK. Barrington's final chapter is devoted to more general speculations about the nature of reality and the place of psi in the larger scheme of things.

In that last chapter, Barrington asserts, "the one overriding law that unifies normal and paranormal under one system is the law of probability," which (she claims) "is built in to the cosmos rather than imposed on it." Moreover, she writes, "I am leading up to positing an all-embracing Cosmic Mind as fundamental."

Mary Rose Barrington is a parapsychologist and a former barrister and charity administrator. She was President of the Oxford University Society for Psychical Research, and joined the Society for Psychical Research in 1957, becoming a Council member in 1962. She is the co-author (with Ian Stevenson and Zofia Weaver) of *A World in a Grain of Sand: The Clairvoyance of Stefan Ossowiecki* (McFarland & Company, 2005). Her essay "Beyond the Boggle Threshold: Confessions of a Macro-Addict," appeared in *Men and Women of Parapsychology, Personal Reflections, ESPRIT Volume 2*, edited by Rosemarie Pilkington (Anomalist Books, 2013).

With regard to the primacy of probability, Barrington reaches the unsurprising conclusion that the human mind, and the unconscious mind in particular, can at least sometimes override usually pervasive statistical natural laws. And in that connection, it's regrettable that Barrington makes no reference to Jule Eisenbud's more nuanced explorations of the same theme (see Eisenbud, 1970, 1992), especially since Eisenbud's conjectures lead away from Barrington's Cosmic Mind (of which we are dissociated parts) and more toward a cooperation among many minds. Interestingly, Barrington seems to posit something like that when she writes, "people's preconceptions are reinforced... to the point of permitting or preventing things from happening. This is a collective version of experimenter effect." Moreover, Eisenbud considers a more subtle range of ostensible psi manifestations (many from the clinical setting), as well as a more radical look at probability (see Kissner 2017). It would certainly have been illuminating to see Barrington engage Eisenbud on these matters and probe more deeply into the issues.

Nevertheless, Barrington provides much food for thought in her final chapter, including a good discussion of both active and passive telepathy, and the nature of mediumship. But no matter what the reader may think about her metaphysical speculations, the primary value of Barrington's book will be her extensive and systematic coverage of JOTT cases. And that's no small achievement.

Incidentally, readers fortunate enough to know Barrington will not be surprised at the delicious and often trenchant humor found in this book. One of my favorites is a jab at "American university researchers with nothing better to do than deprive rats of sleep." Barrington notes parenthetically that "a bit of animal abuse always makes the obvious seem more scientific."

So Barrington's book is easy to recommend. She has undoubtedly and successfully argued for including JOTT in a satisfactory theory of the paranormal. Now if only I could find my socks...

STEPHEN BRAUDE is a philosopher and parapsychologist. He is a past president of the Parapsychological Association and is currently the editor of the *Journal of Scientific Exploration*.

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T. Peter Park

The Vienna Circle and the Paranormal

The scientific investigation of parapsychological phenomena has had unexpected supporters. It has been favored by some vigorous champions of a scientific worldview who might have been expected to dismiss them as “superstition” or “occultism.” One startling example is the “Vienna Circle,” which included several such surprising supporters of parapsychology. The Vienna Circle was a group of German and Austrian scientists, mathematicians, and philosophers meeting at the University of Vienna from 1924 to 1936 to discuss the relation of science and philosophy.

The Vienna Circle had a great influence on the development of 20th century philosophy of science and on the development of later 20th century analytical philosophy. Their philosophy of “Logical Positivism” or “Logical Empiricism,” based on the views of the Austrian physicist-philosopher Ernst Mach, rejected “metaphysics” and ”theology,” emphasizing both logic and a strictly evidence-based empiricist criterion of meaning. Many also saw a Socialist reconstruction of European society and culture as a logical expression of the “scientific world conception” proclaimed in their 1929 manifesto on “The Scientific Conception of the World,” which opened by lamenting “the increase today” of “metaphysical and theologising thought” and celebrating “the opposite spirit of enlightenment and anti-metaphysical factual research” likewise “growing stronger today.”[1]

Ernst Mach

The “metaphysical and theologising thought” deplored by the Circle’s manifesto was seen as rising “not only in life but also in science,” as “easily confirmed” by “the topics of university courses” and “the titles of philosophic publications.” However, a 1929 flyer to “All Friends of the scientific World-Conception” promoting the Vienna Circle warned that “We live in a critical spiritual situation!” as “Metaphysical and theological thought is taking hold in certain groups; astrology, anthroposophy, and similar movements are spreading.” Thus, “Metaphysics” meant not only academic philosophy in the manner of Plato, Kant, or Hegel, but also magic and occultism—e.g., astrology, spiritualism, and anthroposophy. Indeed, the *Metaphysische Rundschau (Metaphysical Review)* was a popular German occult magazine of the 1920s. Thus, when the Vienna Circle bemoaned the rise of “metaphysical thought,” they also evoked that period’s widespread occult revival as an enemy of their movement—not just academic followers of Aquinas, Kant, Hegel, or Heidegger.[2]

Max Weber

With their “scientific world conception” rejecting theology and metaphysics, the Vienna Circle seemingly embodied the “disenchantment of the world,” the progressive disappearance of magic, mystery, and miracle seen by the German sociologist Max Weber as the central trend of modern civilization. We thus might expect them to have been skeptics and debunkers of the paranormal and occult. However, this was not always true, and they were not quite totally “disenchanted.” As radical empiricists stressing evidence and avoiding metaphysics, they rejected preconceived materialist along with idealist or dualist assumptions about what the world is “really like” or “really made of,” and à priori notions of the “possible” and “impossible.” They avoided the dogmatic materialism of the German physicist, physiologist, and experimental psychologist Hermann von Helmholtz, who told the English physicist and psychical researcher William F. Barrett that “Neither the testimony of all the Fellows of the Royal Society, nor even the evidence of my own senses, could lead me to believe in the transmission of thought from one person to another independently of the recognized channels of sensation. It is clearly impossible.”[3]

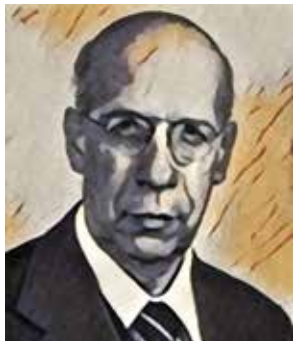
Hermann von Helmholtz

The Vienna Circle’s central figures were the German physicist-philosophers Moritz Schlick (1882–1936) and Rudolf Carnap (1891–1970); the Austrian political economist, mathematician, and Socialist activist Otto Neurath (1882–1945); the Austrian mathematician Hans Hahn (1879–1934); and the Austrian physicist Philipp Frank (1884–1966). Schlick chaired the Circle’s meetings from 1924 until his murder by a demented student in

Moritz Schlick

1936. Schlick, Carnap, and Hahn showed varying degrees of sympathetic interest in the paranormal, while Neurath was a firm skeptic, afraid that such interests would "strengthen supernaturalism" and reinforce political reaction. Neurath, Hahn, and Carnap were ardent Socialists, often described as "the left wing of the Vienna Circle," while Schlick was relatively apolitical, focusing strictly on science and philosophy. The Circle's 1929 manifesto on "The Scientific Conception of the World," stressing that conception's social and cultural implications, was the collaborative work of Neurath, Hahn, and Carnap. Other Vienna Circle figures with paranormal interests included the Austrian mathematician and logician Kurt Gödel, the Austrian philosopher Herbert Feigl, and the Austrian mathematicians Richard von Mises and Karl Menger.[4]


Otto Neurath


Philipp Frank


Karl Menger

The Austrian philosopher Ludwig Wittgenstein was never an actual member of the Vienna Circle, rarely attended their meetings, and in fact had little sympathy with their outlook, but his *Tractatus Logico Philosophicus* (1922) was vastly admired and diligently studied by the Circle. He was actually a mystic, paradoxically displaying an even more ferocious disdain for the occult than did the scientific arch-rationalist Neurath. In the meantime, Neurath combined his paranormal skepticism with a sympathetic view of magic, which following the Scottish folklorist James G Frazer he considered a primitive form of empirical science, free of religion's theological attitude of humble supplication of personal gods or spirits.

Williams College religion scholar Jason Josephson-Storm has questioned the Vienna Circle's supposed total "disenchantment," indeed the whole Weber thesis of a modern "disenchantment of the world," documenting the paranormal interests of many Vienna Circle members, also questioning Weber's "disenchantment" thesis itself. Not only did many Logical Positivists take paranormal phenomena seriously or (like Neurath) hail magic itself as the crude empirical beginning of science, Josephson-Storm argued, but myth, magic, miracle, and the supernatural have never really vanished from modern Western civilization, even among elite intellectuals. "Mythless modernity" is itself a myth, ironically born just as Western Europe was undergoing occult and spiritualist revivals. Weber himself vacationed in 1913 and 1914 among the mystics, occultists, and nature-worshippers of the Monte Verità ("Mountain of Truth") commune in Ascona, Switzerland, Josephson-Storm noted.

The interest of Vienna Circle members like Carnap, Hahn, Schlick, Feigl, and Gödel in paranormal phenomena was a response to a matter of widespread lively cultural and even political concern in post-World War I Austria, felt to affect the possible fate of scientific rationality and progressive politics in 20th century Central Europe, as in their manifesto's concern over the increase of "metaphysical and theologising thought." The 19th century Austro-Hungarian Empire, like Germany, France, and Great Britain, had had its spiritualists, mesmerists, magicians, and psychical researchers with plentiful meetings and lectures on astrology, hypnotism, and other occult and paranormal topics in pre-World-War I Vienna. The "Wissenschaftlicher Verein für Okkultismus in Wien" ("Scientific Society for Occultism in Vienna")—directed from 1899 to 1905 by Robert Hielle and August P. Eder, publishing a biweekly periodical *Seelenkunde* ("Psychic Science") and maintaining a paranormal library—was a pioneering Austrian paranormal investigation society.[5]

With World War I, the collapse of the Austro-Hungarian Empire, and the end of the Habsburg monarchy, a new wave of public interest in the paranormal arose in Austria, reflected in its newspapers and magazines, and marked by the rise of many often-short-lived psychical research organizations. In Austria just as in other countries, the enormous loss of lives in the war inspired keen interest in purported Spiritualist communication with the dead, launching the careers of numerous mediums who became subjects for parapsychological research–notably the Schneider brothers, Rudi and Willi, from Hitler's Upper Austrian birthplace Braunau am Inn. Postwar Vienna's "new influx of mediums" were generally "viewed by the intelligentsia with the utmost scepticism," according to the Vienna Circle's pro-paranormal positivist Karl Menger. The Schneider brothers, impressing visitors in Braunau with physical phenomena like levitating and moving objects from a distance, attracted the attention of the noted physician, neurologist, and psychical researcher Baron Albert von Schrenck-Notzing. He brought the Schneider brothers to Vienna, where they demonstrated their powers in 1921–1922 for visitors like the German philosopher and psychologist Ludwig Klages, the German neopagan mystic Alfred Schuler, the British ghost hunter Harry Price, and the novelist Thomas Mann. This occult and paranormal revival also inspired the Vienna Circle's dismay over "metaphysical and theologising tendencies in thought . . . on the increase."[6]

Hans Hahn

Rudi Schneider conducted several highly controversial séances in Vienna in 1923–1924, where he seemingly levitated objects into the air. A 1924 mock "séance" by University of Vienna physicists Stefan Meyer and Karl Przibram, which was held

Hans Hahn

at Meyer's house with Przibram as "medium" duplicating Rudi's levitations with blatant trickery to the general amusement of everyone present, was widely publicized in the newspapers but failed to convince some Viennese intellectuals that Rudi Schneider had been proved to be a fraud. Believing that paranormal phenomena needed serious research, several University of Vienna scientists formed a committee to investigate Rudi Schneider. They included the Nobel Prize-winning physiologist and psychiatrist Julius Wagner-Jauregg, the theoretical physicist Hans Thirring, and the Vienna Circle's Moritz Schlick and Hans Hahn. The committee never arrived at a solid conclusion, however, and members soon began dropping out—first Wagner-Jauregg, then Schlick, until by 1927 only Hahn and Thirring of the scientists were left in the group. As mathematician Karl Menger, Hahn's graduate student and one of the Vienna Circle's younger members, later recalled, Hahn and Thirring were "not convinced that any of the phenomena produced by mediums were genuine," but "even less sure that all of them were not," believing "rather, that some parapsychological claims might well be justified." Otto Neurath, as Carnap recalled in his 1963 "Intellectual Autobiography," reproached Hahn's active participation in séances "in an attempt to introduce stricter scientific methods of experimentation," arguing that "such séances served chiefly to strengthen supernaturalism and thereby to weaken political progress," while Hahn and Carnap "defended the right to examine objectively and scientifically all processes or alleged processes without regard for the question of whether other people use or misuse the results."[7]

In 1927, Hahn and Thirring joined two Austrian aristocrats—the parapsychologist and astrologer Zoe, Countess Wassilko von Serecki; and the psychoanalyst Alfred, the Baron von Winterstein—to form a group that became the Österreichische Gesellschaft für Psychische Forschung (Austrian Society for Psychical Research, ASPR), with Thirring as the ASPR's first president and Hahn a member of the executive board. One of their first cases was investigating the Romanian peasant poltergeist girl and alleged demonic possession victim Eleonora Zugun, who was brought to Vienna, housed with Countess Wassilko, and studied by Hahn and the Countess. The Countess blamed Eleonora's own subconscious and not the Devil for the phenomena but still believed that real paranormal phenomena were taking place, with Eleonora making objects pass in and out of "hyperspace." The Countess had Eleonora examined by various authorities in clinical settings in Austria, Germany, and England. Eleonora became a famous medium, Countess Wassilko published her colleagues' observations of Eleonora's poltergeist alongside her own, while Hahn confirmed the Countess' observations.[8]

After describing Hahn's involvement in the ASPR and the Eleonore Zugun investigations, Josephson-Storm found it "no surprise" that "several positivists were involved in psychical research," which made "a frequent appearance in their lectures and published writings." While Moritz Schlick "never wrote about his involvement in psychical research," Hans Hahn often mentioned the subject in his lectures, arguing that "in many cases one is dealing with *a genuine phenomenon of some kind*." Hahn was also intrigued by the possibility that extrasensory perception (ESP) might be a real phenomenon. He continued to participate in séances, even encouraging his graduate students to participate in paranormal researches with him. Menger described one time when Hahn asked him to report on a séance he himself was unable to attend. He was totally baffled by the medium's ability to produce a strange, inexplicable knocking.[9]

Herbert Feigl

Herbert Feigl

Another Vienna Circle positivist with paranormal interests was Schlick's student the Austrian philosopher Herbert Feigl. In his 1963 paper, "Physicalism, Unity of Science and the Foundations of Psychology," Feigl described "[s]tatements about the objects and events of the world" as being "generally confirmed (or disconfirmed] by sense perception." He used the "extreme example" of someone claiming "telepathic or clairvoyant intuition of distant events which are inaccessible to him through the normal channels of sense perception." He argued that we would normally consider a clairvoyant's statements as validated, in our "customary commonsensical conception of the spatio-temporal world," only through "confirmation by the direct evidence of sensory perception."[10]

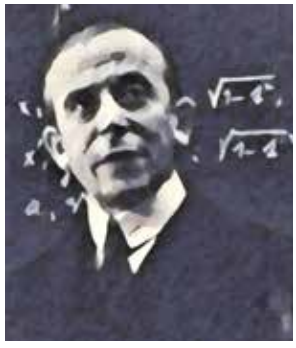
After warning against the "dangers" both of "groundless and limitless speculation" and of an excessive "scientific conservatism" that might "degenerate into a rigidly dogmatic retention of a given frame of explanation," Feigl praised the "highly imaginative and ingenious character of scientific theorizing" shown in the "tremendous and often revolutionary advances of science since the Renaissance, and especially in this century." Still, he noted that the "notorious difficulties of an exact delimitation of the concepts of the 'natural' or the 'physical' reflect the often surprising expansions of scientific concept formation and theory construction." Returning to "the case of mystical experience," he argued that "the present scientific attitude" recognized "the occurrence of these unusual phenomena," but doubted their "interpretation in terms of transcendent entities that the mystics themselves (or some theologians or metaphysicians) impose upon them." Feigl was

> inclined to think that the scientific attitude should be very different (and perhaps will be very different in the near future) with respect to the phenomena of

> parapsychology. If it were fully established that the phenomena of extrasensory perception, i.e., clairvoyance and telepathy, and perhaps even precognition and psychokinesis, do not result from experimental or statistical errors (not to mention self-deception or outright fraud), then our conception of the basic laws of nature may well have to be revised at least in some essential aspects. Curious "actions at a distance"—spatial as well as temporal, and—conceivably enough though by no means necessarily—some basic alterations in our psychophysiological assumptions might have to be introduced.[11]

These "considerations" emphasized "the flexibility or 'openness' of the concept of the 'physical'" and therefore "the need to re-examine the two theses of physicalism in their relations to one another." If "physical" meant "the sort of entities, no matter how inferential or hypothetical," whose "assumption" could be "justified on the basis of 'sensory' confirmation," then the "first thesis of physicalism" implied "clearly the assertion of a certain generic feature of the universe" and was "thus clearly not a truth of pure logic." Thus "physicalism" did not necessarily require a strict reductionist metaphysical materialism.[12] Feigl's arguments convinced Josephson-Storm that the Logical Positvists realized that "if even one parapsychological case were to be proved real," this would "force a revision of the scientific understanding of the laws of nature" comparable to William James justifying his interest in psychical research by arguing that "to upset the law that all crows are black" it is "enough if you prove one single crow to be white."[13]

Richard von Mises



Richard von Mises

Still another Vienna Circle member open to the paranormal was the mathematician Richard von Mises, a younger brother of the libertarian "Austrian School" economist Ludwig von Mises. Discussing the complexities of seemingly random dice-throwing or card-shuffling in *Probability, Statistics, and Truth* (1957), von Mises noted the "[v]ery delicately balanced psychological or physiological phenomena . . . involved in these procedures," which were "well known from the experience with card sharps" and also from "certain observations which have often defied explanation and are the favourite subject matter of so-called 'parapsychology.'" While he did "not want to defend the occult sciences," he still was

> convinced that further unbiased investigation of these phenomena by collection and evaluation of old and new evidence, in the usual scientific manner, will lead us sooner or later to the discovery of new and important relations of which we have as yet no knowledge, but which are natural phenomena in the usual sense.[14]

In a note to this passage, von Mises described the Duke University Parapsychology Laboratory in North Carolina founded in 1937 as "probably" the "principal scientific centre for the study of parapsychology in the United States." He found it "interesting" that "by means of certain statistical experiments, among which a type of card calling experiment is prominent, the existence of so-called extra-sensory perception, ESP, is investigated with the claim that positive results have been obtained." In a December 30, 1949, lecture to the American Association for the Association of Science in New York, however, von Mises more cautiously noted that this aim had hardly yet been realized and pointed out ways to modify the experiments more rigorously to obtain more decisive results. Von Mises also mentioned paranormal research in his *Kleines Lehrbuch des Positivismus* (1939) and his *Selected Papers* (1964).[15]

Kurt Gödel

Kurt Gödel

The Austrian logician, mathematician, and philosopher Kurt Gödel, like Karl Menger one of Hahn's graduate students, is now best-known for the incompleteness theorem bearing his name. However, he was also yet another Vienna Circle figure with strong paranormal interests. Baptized as a Lutheran, identifying himself in 1975 as "theistic rather than pantheistic, following Leibniz rather than Spinoza," and Platonic in his philosophy of mathematics, Gödel was "a bit of an outlier in the group" according to Josephson-Storm. He "did not go to church" but "was religious and read the Bible in bed every Sunday morning," according to his wife, and felt that "Religions are, for the most part, bad—but religion is not." Gödel believed firmly in an afterlife as rationally demonstrable.[16] His biographer John W. Dawson, Jr., observed that Gödel's interest in paranormal phenomena, shown in his letters and private papers, like Hahn's and Carnap's, was a source of disagreement among the Circle members. Gödel's private library included books on philosophy, Christianity, Islam, mysticism, Theosophy, and Spiritualism, reflecting his widely diverse interests as well as his concern with the mystical and esoteric, while his notebooks devoted much space to philosophy, theology, and also demonology, and his friend Georg Kreisel recalled his fascination with ghosts and demons.[17]

When Gödel came to Princeton in 1940 and renewed his acquaintance with his old friend, the Austrian economist Oskar Morgenstern who had arrived there in 1938, Morgenstern was "astonished to learn that Gödel took an interest in ghosts." In a letter to his mother, Gödel saw her "antipathy" toward "occult

phenomena" as "justified" since "it is difficult to disentangle genuine phenomena from the mix of fraud, gullibility, and stupidity," but added that the "fraud" only "masks" rather than "simulates" real phenomena. In another letter, he wrote her that researchers at "a local university with great strength in the sciences" (probably Duke) had proven that "every person" has an ability to predict numbers turning up in games of chance, even if "only to a quite meager degree." He claimed his wife was one of those having this ability to an exceptional degree, having verified this "incontestably" in some 200 trials. He believed also in the possibility of telepathy. Gödel's papers included a shorthand record of a séance, according to Dawson. Gödel's University of Vienna library slips, Dawson added, included two for Alfred Lehrmann's *Aberglaube und Zauberei* (*Superstition and Sorcery*). Gödel told Morgenstern that in a few hundred years it would seem incomprehensible that 20th century scientists had discovered the elementary physical particles and the forces holding them together but had never considered the possibility ("and high probability") of elementary psychic factors. For Dawson, such beliefs fitted in well with Gödel's belief that mind is distinct from matter, and with his mathematical Platonism. Gödel believed that "despite their remoteness from sense experience," mathematical intuitions were not "something purely subjective."[18]

Rudolf Carnap

Rudolf Carnap

Rudolf Carnap is the last major Vienna Circle figure to be connected to paranormal research. A core member of the Circle and co-author with Neurath and Hahn of its manifesto, Carnap is generally regarded as the group's philosophically most complex, subtle, and sophisticated thinker. However, in some ways he might perhaps be considered "a bit of an outlier in the group," almost as much as the frankly religious and metaphysical, and largely apolitical, Gödel. Austrian mathematical logician Carnap's openness toward the paranormal, as suggested by Josephson-Storm, may possibly have been inspired by early influences atypical of other Vienna Circle members—e.g., his strongly religious family background, and his youthful involvement in the German Youth Movement. As we have seen from his "Intellectual Autobiography," Carnap recalled Neurath criticizing Hahn's participation in séances as strengthening "supernaturalism" and thus hindering "political progress," while Carnap and Hahn defended the right to examine all supposed phenomena "objectively and scientifically" regardless of how other people might "use or misuse the results."[19]

Rudolf Carnap was born in 1891 in Ronsdorf, near Barmen and Wuppertal in northwestern Germany, the son of deeply religious Lutheran parents, though he later became a noted atheist. Both of his parents were strongly religious, but their faith was much more moral and practical than dogmatic. From 1910 to 1914, Carnap studied at the universities of Jena and Freiburg in Breisgau, concentrating on philosophy, physics, and mathematics.[20] During his pre-university and then his Jena and Freiburg years, Carnap gradually began doubting orthodox religious doctrines, as incompatible with modern science. As he recalled in his "Intellectual Autobiography," the transformation of his "basic beliefs occurred however not suddenly, but in a gradual development." Abandoning supernatural doctrines like Christ's divinity, "the idea of God as a personal, though immaterial being," and "the belief in immortality as the survival of a personal, conscious soul," the young Carnap adopted "a kind of pantheism" with "certain Spinozist features," coming "less from the works of Spinoza himself than from those of men like Goethe, whose work, personality, and *Lebensweisheit* (wisdom of life) I esteemed very highly."[21]

As a student at Jena, Carnap also participated actively in a semi-pagan branch of the German Youth Movement, a phase of his life that he omitted from his published 1963 "Intellectual Autobiography," but which Jason Josephson-Storm suggested "[p]erhaps…initially drew Carnap to the occult and then the paranormal." The German Youth Movement or *Wandervogel* ("wandering birds") were a back-to-nature movement, rooted in German Romanticism, of middle-class urban boys and young men (later also some girls and young women), rejecting the materialism, complacency, conformity, and pompous militarism of late 19th and early 20th century German "bourgeois" mass society.[22]

Carnap's particular branch of the *Wandervogel* was the Sun-worshipping "Sera Circle" organized in Jena by Eugen Diederichs (1860–1930), a publisher of books on esotericism, German mysticism, Eastern religions, and *völkisch* beliefs. Diederichs, an ardent devotee of Nietzsche, and an enthusiastic prophet of a "New Romanticism," saw the Youth Movement as creating a revitalized German culture for Nietzschean *Übermenschen*. Led by Diederichs, the Sera Circle held neo-pagan celebrations with both traditional and improvised dances and costumes, ritual hymns, and excursions to the hills around Jena.[23]

The Youth Movement "did not leave any externally visible achievements," Carnap later wrote in an unpublished early draft of his autobiography deleted from his 1963 "Intellectual Autobiography," but still "the spirit that lived in this movement, which was like a religion without dogmas, remained a precious inheritance for everyone who had the good luck to take an active part in it."[24]

Ludwig Wittgenstein

If Carnap's open-mindedness toward the paranormal perhaps owed something to his youthful *Wandervogel* involvement or his childhood family piety, it may have also served as one possible factor in Ludwig Wittgenstein's eventual estrangement from the Vienna Circle, exacerbating the already profound differences in temperament and outlook between Wittgenstein and the logical positivists who so admired the *Tractatus Logico-Philosophicus*. Otto Neurath, as we have seen, politely but firmly disapproved of Carnap's and Hahn's paranormal interests as a


Ludwig Wittgenstein

leftist scientific "skeptdebunker" afraid such interests would "strengthen supernaturalism" and thus hinder social and political progress. Wittgenstein, on the other hand, ferociously disdained such interests from the very different perspective of a fastidious aristocratic cultural conservative snobbishly contemptuous of anything "vulgar"—whether "occultism" or facile "progressivism," plebeian "superstition" or intelligentsia "enlightenment." While angrily despising the occult, he also disdained the Vienna Circle's (especially Carnap's and Neurath's) devotion both to the "scientific world-conception" and to a progressivism based on that world-conception.

In his 1963 "Intellectual Autobiography," Carnap himself recalled both his own and Wittgenstein's profound differences in basic outlook, and also their respective attitudes toward the paranormal in an account of his and Moritz Schlick's meetings with Wittgenstein in 1927. In contrast to the Circle's hard-nosed scientists hostile to metaphysics, mysticism, and moralizing, he saw Wittgenstein as a mystic at heart, rationally convinced that religion, mysticism, and ethics indeed had no verbally expressible rational content but still were profound realities that could only be shown or pointed to, but not said, proved, or argued. Carnap specifically mentioned both Wittgenstein's dislike of liberal progressivist enlightenment and his fierce disdain for the occult.

He saw "a striking difference between Wittgenstein's attitude toward philosophical problems" and that of Schlick and himself. His own and Schlick's "attitude toward philosophical problems" was "not very different from that which scientists have toward their problems," seeing "the discussion of doubts and objections of others" as "the best way of testing a new idea in the field of philosophy just as much as in the fields of science," while Wittgenstein "tolerated no critical examination by others, once the insight had been gained by an act of inspiration." Carnap "sometimes had the impression that the deliberately rational and unemotional attitude of the scientist and likewise any ideas which had the flavor of 'enlightenment' were repugnant to Wittgenstein." Thus, at his and Schlick's very first meeting with Wittgenstein, Schlick "mentioned that I was interested in the problem of an international language like Esperanto." Carnap already "expected" Wittgenstein to be "opposed to this idea," but was "surprised by the vehemence of his emotions." A language which had not "grown organically" seemed "not only useless but despicable" to Wittgenstein. Another time, Carnap and Schlick "touched the topic of parapsychology," and Wittgenstein "expressed himself strongly against it." The "alleged messages produced in spiritualistic séances" were "extremely trivial and silly" in Wittgenstein's view. Carnap "agreed with this," but added that "nevertheless the question of the existence and explanation of the alleged parapsychological phenomena was an important scientific problem." Wittgenstein, however, was "shocked that any reasonable man could have any interest in such rubbish."[25]

Carnap's sympathy for paranormal research may possibly, however, have provoked Wittgenstein into more than just "shock" at "any reasonable man" showing "any interest in such rubbish." Carnap's 1963 recollection was echoed by Schlick's graduate student Heinrich Neider, a later minor Vienna Circle member. Neider saw Carnap's interest in the paranormal as causing his falling-out with Wittgenstein, specifically mentioning Wittgenstein's outrage at finding that Carnap owned such "rubbish" as a book by psychical researcher Albert von Schrenck-Notzing:

> Wittgenstein and Carnap had just engaged in a very lively discussion, and Carnap stepped out to make some tea. When Carnap returned he found Wittgenstein stomping about visibly angry, saying: "Why do you have this rubbish?" Carnap: "That is the Schrenck-Notzing." Wittgenstein: "This is the kind of book you have in your library? Do you think I would associate with a person who has such books in his library?" He departed quickly and was never seen [around these parts] again."[26]

Coming back to Carnap, we may note that after mentioning his argument with Wittgenstein over parapsychology in his "Intellectual Autobiography," he also noted Wittgenstein's mystical leanings:

> Earlier, when we were reading Wittgenstein's book back in the Circle, I had erroneously believed that his attitude toward metaphysics was similar to ours. I had not paid sufficient attitude to the statements in his book about the mystical, because his feelings and thoughts in this area were too divergent from mine.[27]

Wittgenstein was likewise not too enamored of science. "All of us in the Circle," Carnap recalled, "had a lively interest in science and mathematics," but Wittgenstein "seemed to look upon these fields with an attitude of indifference and sometimes even with contempt."[28] This led Josephson-Storm to note the paradox that Wittgenstein "dismissed Carnap as a spiritualist while Carnap rejected Wittgenstein as a mystic," in "another example of the interchange of enchantments" where "one paranormal belief comes at the expense of others." As Wittgenstein himself put it in an oft-quoted aphorism in his *Tractatus*, "Not *how* the world is, is the mystical, but *that* it is." As a diehard scientific empiricist, however, Carnap just couldn't help feeling a right to wonder about possible odd twists in "*how* the world is," as well.[29]

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