Number 37 | March 2019

EdgeScience

Current Research and Insights

Afterlife Research

Kindergarten Poltergeist

Animals, Emotion, and Synchronicity

Scientists and Their Extraterrestrials

A publication of the Society for Scientific Exploration

EdgeScience #37
March 2019

EdgeScience is a quarterly magazine.
Print copies are available from
edgescience.magcloud.com.
For further information, see edgescience.org
Email: edgescience@gmail.com

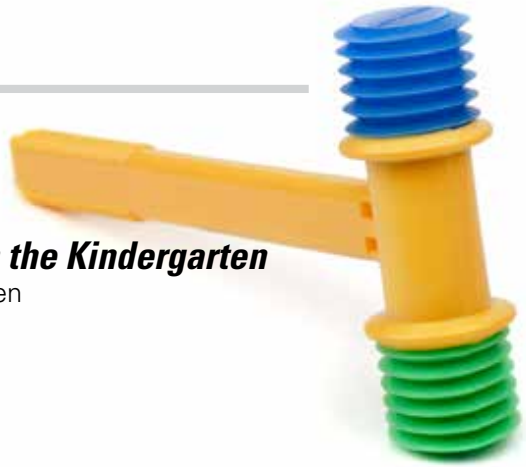
Why EdgeScience? Because, contrary to public perception, scientific knowledge is still full of unknowns. What remains to be discovered—what we don't know—very likely dwarfs what we do know. And what we think we know may not be entirely correct or fully understood. Anomalies, which researchers tend to 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.

ISSN 2330-4545 (Print)
ISSN 2330-4553 (Online)

CONTENTS

FEATURES



Cover: The lookout tower of Galyatet by György Soponyai/flickr, creativecommons.org/licenses/by-nc/2.0/

Michael Grosso

A More Direct Approach to Afterlife Research

Each soul will feel and know itself to be immortal, will feel and know that the entire universe with all its good and with all its beauty is for it and belongs to it forever.

—Richard Bucke, M.D., *Cosmic Consciousness*

It’s 2019; are we now better able to answer the question: Is there a life after death? One thing we are entitled to say: What was once religious belief, an aspect of mythology, may now be reframed as a scientific question that uses evidence and allows one to draw conclusions.

Psychical research, launched by Henry Sidgwick and Frederic Myers in 1882, focuses on proof based on inference to the best explanation. In one case, somebody sees the apparition of a known dead person; the apparition describes where he hid his last written will and testament. No living person knows

Michael Grosso

where the document was hidden. Interested parties go to the unknown place as described by the apparition; the last will is found there and is validated by the courts.

What is the best explanation? Coincidence? Fraud? The percipient's ESP? After due consideration, some might think the best explanation is that the apparition was the dead soul who revealed the location of the will.

Most of the evidence for life after death resembles this example and involves making inferences to the best explanation of facts from mediumship, hauntings, apparitions, reincarnation studies, near-death experiences, and so on. There is something indirect and abstract in the way this type of rational inference takes us to the seat of belief in another world. To say this is not to underrate the importance of rational inference—far from it.

But there is a more direct path to conviction I want to discuss, a path whose psychological impact may be richer, more profound, and even transformative. Laura Dale, former editor of the *Journal of the American Society for Psychical Research*, once said to me that listening to Beethoven's *Missa Solemnis* was to her the greatest proof of immortality. This remark was from a person with a keen sense of evidence and inference. No inference is involved in listening to great music, but for Laura Dale the impact was more powerful and more meaningful.

I had a similar experience once, so I understood what she was saying. I was a high school student at the time and heard a piece of music on the radio by the medieval composer, Johannes Ockeghem (d.1497). It was titled *Credo Sine Nomine* (Belief Without a Name). Listening, I suddenly found myself in another mental space; the feeling was indescribable, perfect, so that dying seemed the thing to do; I felt myself overflowing the limits of my body, and I wanted to just keep going, and in a sense, wanted to "die"—being in my body felt like an obstacle to the full experience of the music. I "saw" my immortality and had unmediated proof of something in me that was deathless.

At a later date, I had *another type* of experience that led to a similar conclusion about a possible next world. The situation was entirely different. This time I was spending the night in a house where nine other people reported seeing what they called a ghost. At two in the morning during my vigil, I not only saw the ghost but it attacked me, wrapping its vaporous form around my shoulders, paralyzing every muscle in my body. The entity that did this was real, personal, and from elsewhere. My experience seemed to confirm the previous claims about the presence of a ghost in the house—so I inferred.

The Two Approaches

So there are two kinds of "argument" for life after death: one based on inference (a linear procedure); the other on immediate apprehension or intuition. In the first, we use reason to build a case for the postmortem survival of a particular person. In the second, a different form of consciousness comes into play, best described as intuitive, ecstatic, super-rational; and one finds oneself already there, so to speak, in another world, outside time and space. One experiences an extraordinary lightness of being, physical and mental, which results in the conviction of immortality. The first method is scrupulous about deploying scientific method; the second arises from a special state of consciousness associated with mystical experience. Charles Tart, an American psychologist known for his work on the nature of consciousness, aptly called this "state-specific" knowledge; you have to be in a particular state of mind in order to know or see its truth and reality. During my vigil in the haunted house, I was in a normal waking state; listening to Ockeghem's music I was in an altered state.

One sense of "proof" is rule-based, logical, and moves from premises to conclusions. The second is rooted in the Latin, Italian sense of the word *prova* meaning "test or experience." I have only to experience the redness of a rose to know it is red. No reasoning process, no movement from premise to conclusion, is necessary. A specific state of mind is crucial for understanding this kind of "proof."

Socrates famously remarked in the *Phaedrus* that "in reality the greatest of blessings come to us through *mania*, when it is sent as a gift of the gods." *Mania* in classical Greek means both madness and ecstasy; if you're *ek-static* you're outside your normal self, and in that sense, are "mad."

After Plato, it was the classical scholar and great psychologist Frederic Myers who singled out ecstasy as key to understanding the unknown potentials of human consciousness. "From a psychological point of view, one main indication of the importance of a subjective phenomenon found in religious experience will be the fact that it is common to all religions. I doubt whether there is any phenomenon, except ecstasy, of which this can be said. From the medicine-man of the lowest savages up to St. John, St. Peter, St. Paul, with Buddha and Mahomet on the way, we find records which, though morally and intellectually much differing, are in psychological essence the same. At all stages alike we find that the spirit is conceived as quitting the body; or, if not quitting it, at least as greatly expanding its range of perception as some state resembling trance."[1]

Friedrich Nietzsche, who, like Myers, also began as a classicist, wrote in his first book, *The Birth of Tragedy Out of the Spirit of Music*, about the difference between ecstasy and emotion, and on that basis distinguished two kinds of music. Emotion was personal and verbal and perfect for lyric opera. But Nietzsche was interested in music that was ecstatic and took us beyond language. Socrates, according to Nietzsche, represents the type of "theoretical" human being whose craving for knowledge ends by destroying the myths we need to live by.

Nietzsche saw in the wild spirituality of the ancient cult of Dionysus the best means of recovery from the deadening onslaught of modern rationalistic culture. He wrote: "Under the charm of the Dionysian not only is the union between man and man reaffirmed, but Nature which has become estranged, hostile, or subjugated, celebrates once more her reconciliation with her prodigal son, man." Prescient, in light of the encroaching eco-catastrophe that science has declared is fast gaining on us. It is a catastrophe resulting from the human will to exploit and "subjugate" nature for profit and power and human comfort.

The ecstatic state by definition is transformative, a shift from self-involvement to self-transcendence, in which the perception of death is transformed. In the *Katha Upanishad*,

Wikimedia/Public Domain

A painting of Yama, the Hindu god of the dead.

Nachiketa interrogates Yama, the Lord of Death, about the afterlife. Yama says that the answer lies in the experience of the Atman, (our subliminal self, we might say). To achieve this, the Lord of Death tells us that we must "concentrate." He says that "Atman is subtler than the subtlest and not to be known by argument." Moreover, "it is the very nature of the Knowledge of Atman to put an end to all doubts." The experience is self-certifying, perhaps not unlike one's perception of the redness of a rose. "The knowing Self [Atman] is not born; it does not die. It has not sprung from anything; nothing has sprung from It. Birthless, eternal, everlasting, it is not killed when the body is killed."[2]

An Enlarged Concept of Mind

Can we make sense of this, and does it help us understand the experiences that people have that convince them of the reality of another world? To do so, we need to expand our idea of mind and consciousness. According to mainstream materialism, this is, of course, impossible. But the mainstream view is questionable, given that nobody has a clue to how consciousness could conceivably emerge from our material brains. Since we are unable to reduce consciousness to the brain, there is nothing to prevent us from assuming that consciousness *pre-exists* the brain. Consciousness is its own reality. "It has not sprung from anything," as the *Katha Upanishad* states. Now, if our minds are part of the one mind described by the *Upanishads*, it might be possible, under the right conditions, to experience the eternal aspect of our consciousness. This is the basis for the alternate, more direct, "noetic" approach to survival research.

Once we free consciousness from the stranglehold of physicalism, we can imagine how some people—by means of yogic and spiritual training or by means of mind-brain traumas and near-death experiences—might experience the noetic sense of their immortality. As far as I can see, these breakthroughs may be triggered by any number of unpredictable circumstances. William James coined the term *noetic*, from the Greek *nous*, Plato's term for intuitive knowledge, which transcends *dianoia*, that is, the rational intellect. James, Plato, and the *Katha Upanishad* help us imagine the basis of this more direct approach to survival research.

The enlarged concept of mind is not an arbitrary stipulation, but is grounded in human experience, mystical and paranormal, which clearly stand outside mainline physicalism.[3] As this enriched paradigm seeps more deeply into the culture, the temptation to explore ways of inducing noetic experience is likely to increase. There might follow from that a new respect for the natural world and a new curiosity about the super-natural world.

I don't want to overstate the next point, but trying to prove that my personal self survives death seems like a symptom of anxiety that might inhibit the second kind of "proof" of immortality. The second proof seems to come when that personality we want to survive dissolves, forgets itself completely. So there seems a certain tension between the two approaches. The need for linear proof is probably antagonistic to the experience of intuitive "proof."

The Meaning of Death

Another misgiving is worth mentioning. We began by discussing a second approach to so-called survival research. You might think people would be interested in this, that is, the *meaning* of death. What happens when it actually occurs?

In a time when information is so readily available, certain things are prominent—mass shootings, civil wars, and acts of terrorism; atrocities of every conceivable sort; images of natural calamities, hurricanes, tsunamis, tornadoes, droughts and rampaging fires; thousands of children starving to death; assassinations, kidnappings, disappearances, and suicide bombings—clearly, we're not shielded from the idea of death. In fact, the collective psyche is obsessed with it, as can plainly be seen on Netflix.

But amid all this newsy carnage, the constant advertisement of the fact of sudden, violent, unjust, morally repulsive trashing of life seems to excite no or very little interest in what happens, if anything, to all those being swept away into the trash bin of yesterday. We have the statistics of the horrors down pat, but the meaning of the endless death data we're bombarded with is never addressed. In our death-enthralled culture, the serious topic of *after* death is taboo.

But, here is another pitch. If it is true that our minds are part of a greater mind that transcends the body, then it should be possible to make contact with that normally hidden dimension of reality. "Contact" could take many forms, spontaneously, or as the result of some kind of spiritual practice. There are case histories that seem to prove that postmortem survival is a fact of nature.

The Next World Now

The question I'm trying to clarify is whether it is possible to experience the next world now.[4] Once we understand the "next world" as referring to a special out-of-body state of consciousness, the idea should seem less quixotic. One theoretical premise should clarify in what sense it is possible to experience the "next" world now.

Assume that the brain does not create but transmit consciousness, as William James suggested. The brain enables us to be conscious of the physical environment and thus work on behalf of our bodily survival. But our consciousness, not rooted in the brain, extends beyond the immediate physical environment into a world, as Heraclitus said, "without boundaries"—the infinite one mind that so many great traditions acknowledge, each in their distinctive fashion.

Humans have discovered ways to make contact with the One Great Mind, called by different names in different cultures. Traditional methods revolve around one major principle—conscious dissociation from ordinary reality—by fasting, chant, meditation, prayer, surrealism, detachment from material possessions, chastity, tantrism, breath control, ecstatic dance, solitude, entheogens, and so on and so forth—anything that serves to break the spell of solidarity with the everyday business of life. We don't want to neglect our higher allegiances. The challenge is getting oneself out of the way, so that something greater, perhaps at first fearful and incomprehensible, can break into our consciousness.

Michael Grosso is an independent scholar and artist who studied classics and got his doctorate in philosophy from Columbia University. Current interests include consciousness studies and extreme psychophysical phenomena. His recent books include *The Final Choice: Death or Trancendence*; and *The Man Who Could Fly: St. Joseph of Copertino and the Mystery of Levitation*. His blog is at consciousnessunbound.blogspot.com and he may occasionally be found on Facebook.

ENDNOTES

1. Frederic Myers (1903), *Human Personality and its Survival of Bodily Death*. (Vol. 2, pp.460-61).
2. Swami Nikhilananda (1963), *The Upanishads*. Harper Torchbooks, pp. 72-73.
3. Ed Kelly, ed. (2007) *Irreducible Mind: Toward a Psychology for the 21st Century*. Rowman & Littlefield.
4. For an overview of the basic types of afterlife evidence and of methods conducive to direct, intuitive contact, see Michael Grosso (2004). *Experiencing the Next World Now*, Paraview Pocket Books.

Terje G. Simonsen

A Poltergeist in the Kindergarten

mustafagull/iStock

In press reports from 2010, Lalm kindergarten in Gudbrandsdalen (meaning Gudbrand's Valley), Norway, appeared to be a veritable haunted house. Between April 26 and June 15, all 15 employees witnessed diverse objects—cups, mugs, stones, jars, etc.—flying through the rooms! Sometimes these items seemed to appear out of thin air. In addition, doors opened and closed by themselves, figures were drawn with crayons moved by no one's hand (no human's hand that is…), feathers used for decoration organized themselves into specific patterns, and so on. More than 90 seemingly inexplicable episodes occurred. And, interestingly enough, many of these events were observed by two or three adults simultaneously. In some cases, there were even as many as 20 witnesses.

At first it was—of course—assumed that tricksters, young or grown-ups, were to blame. But since no one was ever caught and since the strange activities also eventually came to involve heavier objects and louder noises, both adults and children became increasingly perturbed. At last it was decided to take some action to end the turmoil.

But how does one take action against something like this? Well, a priest was called in, and having him "do his thing" provided, in fact, some alleviation. It proved short-lived, though, and the phenomena gradually returned. Then a clairvoyant was summoned, and after she did "her thing," the relief—by cause or by coincidence—proved to be lasting. And subsequently Lalm kindergarten has only seen and heard the type of activities and noises that are supposed to occur in kindergartens.

But all these strange phenomena had sparked off an interest in understanding what on earth had been going on! Therefore, psychology professor Kjell Flekkøy was sent for. Flekkøy is a highly respected professional; he is a specialist in neuropsychology (the connection between brain and behavior) and is professor emeritus at the University of Oslo, and he has also been professor at Ullevaal hospital. Flekkøy has often prepared evaluations and reports for courtrooms and acted in other public and official capacities. In addition to his own expertise, Flekkøy requested assistance from a professor of physics at the University of Oslo.

Alternative Explanations

Following inspections and interviews, Flekkøy wrote a report where he outlined a cluster of possible explanations for the uncanny phenomena. There are six alternative interpretations of these observations: (a) child's games, (b) lies, (c) psychosis, (d) delusion/mass suggestion, (e) tricks and (stage) magic, (f) the incidents witnessed by many are physically real.

Flekkøy is, of course, well aware that these are exceptional circumstances he is evaluating, and in the introduction he writes:

> In the following, I'll discuss the basis for confidence in the data, even if this thematically belongs in the discussion section. The reason is this: the phenomena portrayed are so unusual and little understood that the reader will be reluctant to take them seriously, as is the case with this report. Therefore it is necessary to evaluate the basis for confidence in the data as a first step.


MicroStockHub/iStock

One gets a clear picture of what Flekkøy means when reading the factual part of the report:

> Smaller objects suddenly appear without a sound "like out of the air" at eye-height, eventually at ceiling height, hit the ground, always with a louder than usual sound, but with an otherwise normal character of sound. Where starting-points are located [it appears that] the movements have a very abrupt start with an "explosive" character; the object whips away. Especially initially, the items concerned were mostly small and lightweight (a toy hammer, keys, blackboard magnets, etc..); later also larger objects.

The flying objects are also said to have behaved in an unusual way:

> Breakable objects made of glass or ceramics do not smash into pieces as opposed to our usual experience with such items (cups, jars). When hitting the walls, no marks are made despite what would be expected based on the item's weight, shape, speed and direction (e.g. a glue stick). On one specific occasion a jar of jam with a screw cap of metal was crushed to very small fragments after hitting the wall—but without leaving any mark on the wall.

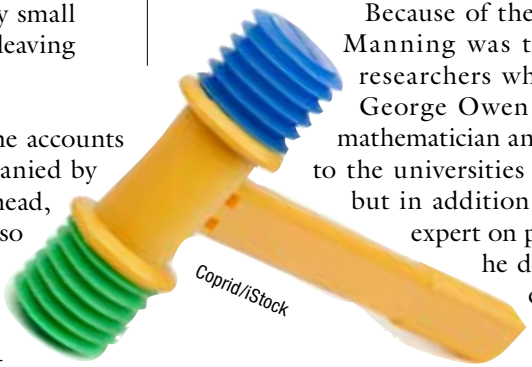
These indeed peculiar events, according to the accounts of the kindergarten staff, would often be accompanied by unpleasant sensations—feelings of pressure in the head, sensations of cold, putrid odor, and sometimes also noises, such as bangs and crackles. In short: There's been a poltergeist afoot! Within traditional occultism, activities of this kind will often be blamed on spirits, goblins or the like. Whereas in parapsychology they will be seen rather as a chaotic form of psychokinesis, a human ability, usually lying dormant. This assumption is partly based on the fact that poltergeist activities often seem to be linked to the presence of certain people; e.g. typically sensitive teens with dire inner conflicts. When such people are away, say on holiday, or become more stable and harmonious, the poltergeist tends to disappear. (A cynical approach would be to say that this is due to the removal of the likelihood and/or the need to fake this sort of drama…)

Apparent Psychokinesis

An illustrative example would be the English healer Matthew Manning who told of telekinetic episodes with heavy furniture spontaneously sliding along the floor, cutlery flying out of drawers, stale bread appearing out of thin air, etc. Several cases of this type occurred at Manning's boarding school, and some

"These peculiar events… would often be accompanied by unpleasant sensations—feelings of pressure in the head, sensations of cold, putrid odor, and sometimes also noises, such as bangs and crackles."

are said to have been witnessed by more than 20 schoolboys. Manning relates that these events were quite stressful to him (no wonder…). But the problems were eventually resolved; the phenomena gradually ceased to appear, first when Manning took up automatic writing and painting, and later healing. Manning suggests that perhaps the same power that had been used to manifest as chaos now instead manifests itself harmoniously in the form of healing. For the last 30 years, Manning has enjoyed a reputation as one of the foremost healers in the world, with myriads of clients from a slew of countries. He has become an acquaintance of Prince Charles (it may not be an irrefutable proof of authenticity, but still…) and has lectured to members of the British Medical Association at their request.


Coprid/iStock

Because of the alleged poltergeist episodes Manning was thoroughly investigated by researchers while young, in particular by George Owen (1919–2003). Owen was a mathematician and a geneticist with affiliations to the universities of Cambridge and Toronto, but in addition he was considered to be an expert on poltergeists. In the laboratory, he detected that Manning's brain exhibited a quite unique wave pattern, with sudden bursts and unusually strong activity in the theta range. The range of 4-7 oscillations per second is the same range that shamans will often stimulate with their drumming. Owen assumed that Manning's peculiar brain wave pattern was related to the poltergeist activity in some way.

Well, whatever explanation model one uses—spirits or psychokinesis—the experiences reported by both the personnel in Lalm kindergarten and by Manning are indeed something out of the ordinary. One is tempted, just as Flekkøy mentions in the introduction to his report, to dismiss the whole thing—which, in fact, many of the outsiders in Lalm did initially. But after a while, other people, not only the staff, started to experience the poltergeist.… A parent, who initially was highly skeptical of the staff's account, claims to have seen a marker pen, two pebbles, and a plastic lid manifesting seemingly out of nowhere. We'll give the word to this skeptic, as he is quoted in Professor Flekkøy's report:

> Right after we [the skeptic and two others] had entered the eastern part of the kindergarten's living room, we heard a kind of snap from the ceiling. Then appeared a felt-tip pen of the sort we usually call a marker. It came at high speed from the ceiling and landed in a window facing south. The marker landed on the windowsill, and stopped as if had landed in glue. There it lay motionless. I picked it up and put it in my pocket…

Flekkøy comments: After about two minutes in this room, they once more heard the same sound from the ceiling, and a tiny light bulb right in front of them (the light bulb was of a type not used for regular illumination but rather for decoration). Together with the light bulb a pebble landed (of the size of a thumb nail). He picked up the items and felt that the light bulb was warm, "as if it just had been switched off!" In the same room, after a short while: The same sound, and now a plastic lid landed with a certain sliding motion along the floor. In the western section of the kindergarten:

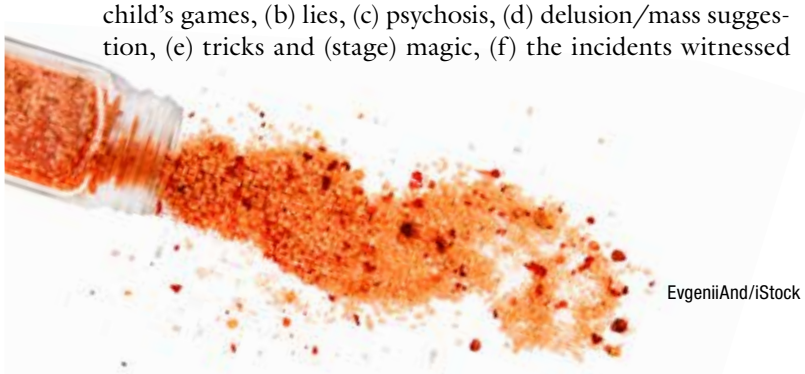
> In the same moment as we [the skeptic and the two others] entered this room, the sound came from the ceiling. Then there appeared a stone at head height that landed right before our feet. The stone had the size of the fist of a 3–4-year-old. The stone stopped right after it had landed. In the meantime another of the parents had arrived who also saw the event.

Some crazy stuff, this…. Later that same evening, they heard once more the snapping sound from the ceiling, after which a toy log came down from the ceiling. Flekkøy comments dryly:

> Interestingly enough, the concerned parent had initially been markedly critical of the veracity of the accounts of the personnel—as had most of the other men. This was rapidly and lastingly changed after the self-observation.

Magical Phenomena

As stated, more than 90 different, very particular episodes were reported, and several of them were more complex and multifaceted—concurrent manifestations of strange movements, sounds, smells and sensations—than those given here as brief examples. After extensive deliberations back and forth, where the six options from the introduction were considered—(a) child's games, (b) lies, (c) psychosis, (d) delusion/mass suggestion, (e) tricks and (stage) magic, (f) the incidents witnessed by many are physically real—Flekkøy concludes mainly with the latter, namely that most of the reported episodes really (physically) happened: "Overall, there is a basis for assessing the observations from Lalm and equally well documented observations as being physically real." Flekkøy discusses possible explanations without coming down on the side of any specific one, and chooses—as is typical of sober scientists—to pass the ball on to future research. But, indeed, with a declared opening for new and exciting perspectives:



EvgeniiAnd/iStock

> the implication being that the phenomena are merited a scientific elucidation of their nature. It is highly probable that such clarification will open doors leading to a more fundamental understanding of key aspects of our own nature as well as the nature surrounding us.

Flekkøy's report is called "Lalm kindergarten: Overview and assessment of ectopic incidents from April 26–June 15, 2010."* The report is thorough in its descriptions and discussions, and is an exciting read—highly recommended! (It will demand a little extra effort, though, as Professor Flekkøy writes in Nynorsk, a special branch of Norwegian, not so easily read by translation programs.)

If Flekkøy's conclusion is correct, such "magical" phenomena, defying ordinary human comprehension, occur not only in remote times, in distant realms or in fairy tales, nor only in the Baghdad of *One Thousand and One Nights* or at Hogwarts School of Witchcraft and Wizardry, but also in Lalm kindergarten deep in the Gudbrandsdalen. And it came to pass in the days where Barack Obama was the emperor of the USA and Jens Stoltenberg was the governor of Norway. Who would have believed—yes, who would ever have believed it?

*Kjell Flekkøy: Lalm barnehage: Oversikt og vurdering av uvanlege hendingar frå 26. april til 15. juni 2010. Rapport til Vågå kommune, desember 2010.

Excerpted with permission from *Our Secret Powers: Telepathy, Clairvoyance and Precognition A Short History of (Nearly) Everything Paranormal* by Terje G. Simonsen, published by Pari Publishing, 2018.

TERJE G. SIMONSEN is a Norwegin author with a Ph.D. in the History of Ideas. He has increasingly focused his attention on the Philosophy of Religion, more specifically on the esoteric and occult traditions. *Our Secret Powers* is his first book in English. His website is www.facebook.com/OurSecretPowers/

Diana Walsh Pasulka

The Reception of Scientific Ideas from Alleged Supernatural Beings and Extraterrestrials

A Chapter in the History of Unorthodox Science

Within every academic discipline there are subfields and specialties. My subfield is Catholic History, as well as the examination of connections between technologies and religious practice. Not surprisingly, over the years I have come upon many instances where scientists discuss their own discoveries or technologies and the connections these have with religious phenomena. I am no longer surprised by this as there are copious examples from the annals of history, such as Emanuel Swedenborg. Swedenborg, a Swedish contemporary of philosopher Immanuel Kant who wrote about Swedenborg's paranormal skills, was a genius who believed that he was in contact with angels and extraterrestrials. He has been identified by Stanford researchers as having one of the highest I.Q.s in history. The brilliant early twentieth century Indian mathematician, Srinivasa Ramanujan, whose math theorems are still so perplexing to scholars that a journal has been dedicated to this work, believed that he received his mathematical ideas directly from the Hindu goddess Lakshmi. He related that she provided these equations in his dreams and whispered them in his ear.

Given this knowledge of the history of religion and technology, then, it was not necessarily surprising to find that Dr. John Nash, the "beautiful mind" and mathematician, also had similar experiences. I recently came across an essay by psychiatrist and neuroscientist Nancy C. Andreason that examined the links between creative genius and mental illness. I had just published my own research that was, in part, a study of high functioning scientists and their beliefs in extraterrestrial intelligence. I was interested in the cognitive processes of high functioning people with unconventional beliefs, such as belief in extraterrestrials, and perhaps mental illness. Andreason's informative article had nothing to do with extraterrestrials, or so I thought, until I read the last few paragraphs. That is when I discovered that Nash believed that he was in contact with extraterrestrials. Andreason relates that while Nash was institutionalized, a visiting friend asked him the following: "How could you, a mathematician, a man devoted to reason and logical truth, believe that extraterrestrials are sending you messages? How could you believe that you are being recruited by aliens from outer space to save the world?" Nash replied:

Emanuel Swedenborg (Wikimedia)

Srinivasa Ramanujan (Wikimedia)

John Nash (Elke Wetzig/Wikimedia)

"Because the ideas I had about supernatural beings came to me the same way that my mathematical ideas did. So I took them seriously."[1]

One of the main points of my research is to reveal that people come to believe in extraterrestrials through their engagement with cultural and media frameworks and how this impacts the ways in which religions are practiced. I did expect to find that the ubiquitous image of the extraterrestrial has replaced traditional representations of the sacred, and that scientists, like Richard Dawkins, would be more inclined to believe in extraterrestrials than supernatural beings. I didn't expect to find that many of scientists and technopreneurs I spoke with believed that their own ideas and discoveries were "downloaded" into their minds by beings other than themselves, and in some cases, extraterrestrial beings. This download process appeared to share similar patterns. For example, Ramanujan's idea that Lakshmi placed equations in his head perplexed Oxford scholars, as they couldn't understand how he came to know the equation without first going through what scientists typically go through, that is, a laborious process of working it out. Although Nash's belief in extraterrestrials was thought to be a symptom of his illness, Ramanujan's idea of Lakshmi, situated as it was within the religion of Hinduism, was not considered delusional. Although scholars did wonder how he came to this knowledge, they never considered that Lakshmi actually provided it to him, which is what he believed.

A form of Hindu goddess Lakshmi worshipped in Namagiri, India.
Raja Ravi Varma/Maharaja Fateh Singh Museum

I'm lucky because in my field we are generally trained not to weigh-in on the truth claims of believers. In my study of scientists who believe in extraterrestrials, I never asked them to prove or disprove their claims. Although some certainly thought they had smoking gun proof, I am not scientifically sophisticated enough to ascertain whether their claims are true. To me, the question of proof, though compelling, was not the question I was asking. This is what interested me: these scientists were producing technologies that were rapidly changing our world, and I was interested in how they acquired their ideas. They believed their ideas were put into their heads. It was comments like these that were suspiciously similar to John Nash's characterization of his own experiences communicating with extraterrestrials, or to earlier scientists who believed they were given their ideas by angels. In other words, I wasn't necessarily interested in whether extraterrestrials were real or not, but I was interested in how it felt to be in communication with them when they provided actionable information. As Nash described it, the ideas came to him in the same way as mathematical ideas came to him. What way was that? How did it feel, how did Nash distinguish these ideas from, say, other ideas, like what to eat for lunch? Was it like, for example, the way in which Descartes described having "clear and distinct" perceptions, something that was so self-evident that it could not be doubted?

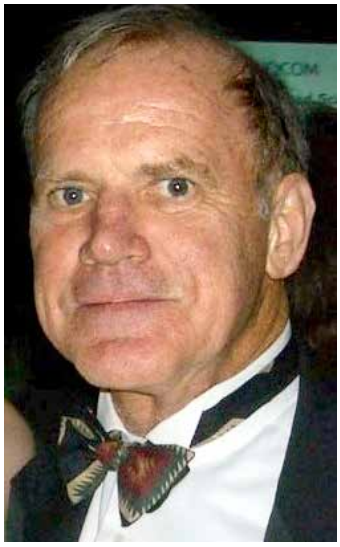
Of the scientists I interviewed, common features of their creative process included going over the question in their minds, and then, basically, either forgetting about it, or sleeping on it, or engaging in an activity that seemed to relax the rational use of the brain, such as painting a room. None of them stated that they worked feverishly to figure it out. Somehow, the concept just "popped" into their minds when they weren't actually thinking about it. One of the scientists I interviewed, who asked to remain anonymous due to the stigma associated with the topic of extraterrestrials, related that he knew an idea came from outside of himself when he felt it, because it felt different from his other thoughts. "It comes out of nowhere, and I feel a 'ping' with it. That's how I know it's from them." Another scientist, who works at one of the top five research universities in the United States, described his creative process. For him, it was not hard to come up with the ideas, as he carefully laid out the problem in his mind before going to sleep, and then the next day the answer would present itself. He knew it was the answer because, as Descartes noted, it was "self-evident."

I am not a scholar of cognitive processes or creativity, so I decided to read the work of those who are. In an article on the *Scientific American* website that appeared in a section ironically titled "Beautiful Minds," I found confirmation that the scientists I studied were in fact following a protocol of creativity that was associated with reducing the activation of "the Executive Attention," what I had been calling the rational mind, to allow "your mind to roam free" and "imagine new possibilities." The authors of the essay used the examples of jazz musicians and rappers.[2] But what of the idea that my scientists had, that these ideas were somehow placed in their minds by an external source, either by extraterrestrials or by goddesses or angels? Could cognitive research in creativity explain this? Ancient ideas of creativity, such as the Muses of the Greeks, situated it as something that was externally provided by a divine source. Certainly, my scientists didn't take credit, generally, for their ideas. They ascribed them to external sources.

In our post-Enlightenment age, we don't take seriously the claims of brilliant people like John Nash or my scientists that their ideas are actually placed in their minds by external others, such as non-human intelligence. This reductive approach reigns, of course, and without proof, it should. How could we, using the scientific method, reveal that Lakshmi provided Ramanujan with his math equations? We can't. Thankfully, we do nave neuroscientists who do consider the claims of creative

people that their ideas feel like they are externally placed within their minds. Dr. Heather Berlin studies the neuroscience of imagination, and while she is not claiming that Lakshmi or extraterrestrials exist, she does seriously consider the claims of highly creative people regarding how it feels to have ideas appear from out of nowhere, apparently, and show up in their minds.[3] Taking these claims seriously is a move in the direction of a non-reductive approach without actually confirming the existence of an external agent. Yet, it also does not rule them out. Perhaps further insight into the brains and cognitive processes of highly creative people will reveal more about our very strange world, and perhaps this is part of the history of unorthodox science.

It seems like good research protocol to listen to highly creative, innovative people explain their own experiences of where they derive their ideas. I recently did this with Dr. Kary Mullis and his wife Nancy. Kary Mullis, the controversial chemist who won the Nobel Prize in Chemistry in 1993 for developing the polymerase chain reaction, is also known for having written about his own "UFO" and abduction experience. For three days I had the pleasure of listening to them talk about Kary's ideas of creativity (which can be found on his website), in addition to his advice to young scientists. He related what he experienced as he approached his Mendocino cabin one foggy night. As he walked toward the cabin he noticed a short, illuminated animal, which he described as an "electric racoon." Of course, it wasn't a racoon, he didn't actually know what it was, but it did greet him: "Good evening, Dr. Mullis." He said he then didn't remember anything until the next morning when he awoke walking through his property, wearing clothes he had been wearing the day before. Dr. Jeffrey Kripal has commented on this incident in Mullis's life and wonders if there is a connection to his unusual creativity.



Kary Mullis
Dona Mapston/Wikimedia

As I studied Mullis's writings, I couldn't help but be struck by his rather unusual but highly familiar characterization of the process of creativity—that is, familiar to the scientists with whom I had been working. "Creativity is when you are trying to figure something out and something else keeps intruding. You finally give in to it, and it turns out to be the answer you were looking for. Perhaps something is lost and instead of looking for it, you let your hands lead you to it with your eyes closed. You might be looking something up and find the wrong subject and it turns out not only to be related, but to be exactly what you were after. It's not an accident. It was inevitable and it all makes perfect sense after the moment, but it's unexpected. That's how creativity happens. The focused beam of your consciousness is very narrow, but you have a creepy sense of what is right behind you."[4]

This description of creativity was not unfamiliar to the scientists I worked with in the research for my book.[5] As Berlin's research suggests, more attention needs to be paid to the less conventional, and more unorthodox, ways in which high functioning scientists come by their innovative ideas.

REFERENCES

1. Nancy C. Andreasen, "Secrets of the Creative Brain," *The Atlantic*, July/August 2014, www.theatlantic.com/magazine/archive/2014/07/secrets-of-the-creative-brain/372299/
2. Scott Barry Kaufman, "The Real Neuroscience of Creativity," *Scientific American*, August 19, 2013, blogs.scientificamerican.com/beautiful-minds/the-real-neuroscience-of-creativity/
3. Karen Shakerdge, "The neuroscience of creative flow," *PRI*, November 1, 2018, www.pri.org/stories/2018-11-01/neuroscience-creative-flow
4. Kary Mullis, "Science: The benefits of science," Dr. Kary Mullis, www.karymullis.com/science.shtml
5. D. W. Pasulka, *American Cosmic: UFOs, Religion, and Technology*, Oxford University Press, 2019.

DIANA WALSH PASULKA is a Professor of Religious Studies and Chair of the Department of Philosophy and Religion at the University of North Carolina, Wilmington. Her research centers on contemporary connections between technology and human belief in the context of religious history. Her most recent book is *American Cosmic: UFOs, Religion, and Technology*. She has pioneered new methods in her field, including "embedded research," which places scholars directly within the fields they study. As history and religion consultant for movies and television, including *The Conjuring* (2013) she identified and published about the specific mechanisms that create and sustain belief. Diana has conducted research at the Archivio Segreto Vaticano (The Vatican Secret Archives) and Specola Vaticana (the Vatican Space Observatory) and is currently the head of a manuscript translation project of the canonization records of St. Joseph of Coptertino and Sr. Mary of Agreda. Her website is Americancosmic.com.

Michael Jawer

From Psyche to Scarab: The Emotional Resonance of Animals in Symbolism and Synchronicity

Looking at our animal cousins—who have eyes, ears, mouths, limbs, and skin as we do (or their own versions of them)—we behold beings both like and unlike us. In some ways, they are rather alien, literally beastly. In other ways, we see aspects of ourselves. Together, we populate a "more than human world"[1] in which we are born, mature, live and, eventually, die. While alive, all animals possess bodies with sensory capacities and a metabolism; furthermore, we display energy and some form of intent (even if it appears instinctive). All of this distinguishes us from the vegetative as *animate*. The Latin root of animate, *anima*, translates to liveliness, spirit, zest, vitality.[2]

Philosophers down the ages have speculated about the relationship of humans and other animals, indeed about the relationship of humans to the rest of nature. Prior to the Enlightenment, everything in nature was seen as interconnected, reflecting a spiritual unity.

Matthew Zylstra/eyes4earth.org

In more recent times, Carl Jung developed his theory of synchronicity from the observation of uncanny coincidences between dreams and wakeful existence—at least two of which (noted below) involved animals. Indeed, some of the most intriguing instances of synchronicities involve animals. This should not be surprising since animals hold a good deal of emotional and symbolic significance; they are key figures in children's stories, in songs, in myths, and in dreams. The fact that animals are sensate, and that many of them have feelings and cognitions similar to humans' (including the capacity to dream), suggests a basis in our communal sentience for synchronicities and all that they imply.

Here I will examine emotion as the currency of symbolism and synchronicity, and as the key to important similarities between human beings and other living creatures. Emotion, as neuroscientist Antonio Damasio argued, underpins all cognition.[3] Feelings form the substrate of our very sense of self, according to evolutionary psychologist Nicholas Humphrey. Descartes' dictum, the two men agree, should be updated to "Sentio, ergo sum: I feel, therefore I am."[4]

A Pair of Animal Encounters

Of the following two accounts, the first, reported by Jung, is his most famous short account of a synchronicity:[5]

> A young woman I was treating had, at a critical moment, a dream in which she was given a golden scarab. While she was telling me this dream, I sat with my back to the closed window. Suddenly I heard a noise behind me, like a gentle tapping. I turned round and saw a flying insect knocking against the window pane from the outside. I opened the window and caught the creature in the air as it flew in. It was the nearest analogy to a golden scarab one finds in our latitudes, a scarabaeid beetle, the common rose-chafer (*Cetonia aurata*), which, contrary to its usual habits had evidently felt the urge to get into a dark room at this particular moment. I must admit that nothing like it ever happened to me before or since.

Next is a contemporary account by a California woman, where what is inner and what is outer similarly align.[6]

In January, I dreamed of watching a mountain lion give birth. Six weeks later, on a Sunday morning in February, a mountain lion strolled through the oak trees behind my house….The mountain lion is the rarest animal that roams these hills. Sleek, shy of humans, almost completely nocturnal, the big cat is seldom seen….

Mountain lions are this continent's "big cat," a category of animals that has stirred the human psyche for centuries. Listen to Laurens van der Post in his book *A Testament to the Wilderness*: "The lion, not only in the imagination of first man, but even in our day, is not the king of the beasts for nothing…It is powerful. It is swift. It is strong…Above all, the lion is fundamentally the cat that walks alone. In other words, the lion is the individual; it is the symbol of the instinctive and royal individual self."

….In my dream…the big cat was giving birth in a zoo. I was watching with my brother and a friend. We looked right into the cat's vagina, and we could see the folds of its uterus contract, struggling to give forth. The new life hadn't quite been born when the dream ended.

I didn't understand the meaning of the dream until I came across the van der Post passage quoted above. I then concluded that the dream was about my "royal, individual self," which was, in many ways, struggling to be born…

Karthik Arumugam/iStock

So when the mountain lion walked in front of my woodpile a month later, I was…aware of a certain lack of surprise, as if some secret part of me had, in fact, been awaiting such a visit since the night of my dream. I had no doubt that this cat had come for me. For me to be at my desk on a Sunday morning and to be looking out the window at the precise moment when a shy, seldom seen, nocturnal predator appeared was too much of a coincidence. For 15 years I hadn't seen a mountain lion, and then I'd dreamed of a big cat *and* seen one within a six-week period. The synchronicity brought my inner and outer worlds together with such force that it left me tingling for hours…

This, I understood, was what it was like to live in a world in which inside and outside are one...To experience this feeling—as I did, courtesy of the mountain lion—is to know what it means to live in perfect accord with nature: as if all life, inner and outer, is engaged in a single purpose.

What Vertebrates Have in Common

Eco-philosopher David Abram presents a valuable overarching concept. He views all living creatures as comprising a "commonwealth of breath,"[7] hearkening back to the observation of the Greco-Roman philosopher Plotinus that "we [all creatures] breathe together."[8] In this simple way—respiration—we are all one.

Modern neuroscience has a great deal more to add about the similarities between humans and other animals. The late Jaak Panksepp, an authority on the neurobiology of emotion, asserted that "the evidence is now inescapable: at the basic emotional level, all mammals are remarkably similar."[9] His conclusion was based on several factors. First, biochemicals such as oxytocin, epinephrine, serotonin, and dopamine—which manifestly influence human feelings—are found in other animals, too.[10] Second, the more primitive parts of the human brain, including the limbic portion that mediates feeling, have their counterparts in other animals' craniums and nervous systems.[11] Third is the existence of mirror neurons—cells in the brain that fire in response to witnessing the same actions one has performed being performed by *someone else*. Mirror neurons play a key role in empathy, and they function not just in humans but in other species ranging from monkeys to mice.[12] Fourth, most mammals are social creatures—and if an individual is going to live with others, it's very useful to have feelings. Getting along, after all, involves communicating key messages as well as the ability to decode the essential messages others are sending *you*.[13]

That the capacity to feel is common to not only mammals but other vertebrates is borne out by another neural fact. The brain, over millions of years of evolution, grew from the bottom up, with its higher, thinking centers developing out of lower, more ancient parts.[14] From the brainstem—the seat of such basic functions as breathing, metabolism, instinct, and reflex—emerged the limbic structures (where feelings are processed) and, more millennia later, the neocortex. Thus, there was an "emotional brain" long before there was a rational one.[15]

Feelings are Felt Intensively by Other Animals

Anyone who owns or spends time with an animal knows, without question, that it has feelings. Pets can show sadness and elation, anger and affection, contentment and loyalty, agitation and fear, perhaps even annoyance, jealousy, embarrassment, and guilt. Such personal observations are increasingly

validated by scientific studies—not just of domestic animals but an array of wild ones, too, particularly elephants, dolphins, and primates.[16]

It is even possible that some other creatures are *more* aware of feelings than human beings are, because they possess a "primary" form of consciousness: they are aware of themselves and their environment but less burdened by complexities such as reflection and rumination that typify human consciousness. They live closer to the bone, one might say, than we do.

It is equally possible that, in light of their different living circumstances and sensory capabilities, other species may experience some emotional states that we do not.[17] This speculation calls to mind a question posed by the Romantic poet William Blake: "How do you know but that every bird that cleaves the aerial way is not an immense world of delight closed to your senses five?"

Panksepp's view is that all mammals, at least, are "brothers and sisters under the skin" since we share the same fundamental neurology and physiology. He further believed that, once we understand the nature of other animals' feelings, "we will finally understand ourselves."[18] I suspect there may be even more to discover via a deeper understanding of our shared emotionality—what we might call the "commonwealth of feeling."

Animals' Capacity for Empathy and Altrusim

The most significant trait in such a commonwealth is that of empathy. The subject is now a widely studied one, with much of the evidence gathered by Emory University primatologist Frans de Waal in *The Age of Empathy.*[19]

One example he provides is that of a chimpanzee called Yoni. Soviet-era primatologist Nadia Kohts investigated Yoni, who demonstrated extreme concern and compassion for her. As Kohts wrote:[20]

> If I pretend to be crying, close my eyes and weep, Yoni immediately stops his play or any other activities, quickly runs over to me…from the most remote places in the house…He hastily runs around me, as if looking for the offender; looking at my face, he tenderly takes my chin in his palm, lightly touches my face with his finger, as though trying to understand what is happening.

Yoni was displaying more than empathy. He was demonstrating *sympathy*, which not only encompasses an awareness of what someone else is feeling but the urge to act to alleviate the other's plight.[21] We could equally call it altruism.

The trait is commonplace in dogs. Darwin, in his book *The Expression of the Emotions in Man and Animals,* noted how a particular dog would never walk by a basket where a sick friend (a cat) lay without giving her a few licks with his tongue.[22] Many other species, though, manifest sympathy. One example: experiments have shown that not only do rats become agitated when seeing surgery performed on other rats but that, when presented with a trapped lab-mate and a piece of chocolate, they will free their caged brethren before eating.[23]

Most striking is when a member of one species acts to help a member of another. Apes have been known to save birds[24] and, in one case, a seal rescued an old dog that could barely keep its head above water in a river. According to an eyewitness, the seal "popped out of nowhere. He came behind [the dog] and actually pushed him. This dog would not have survived if it hadn't been for that seal."[25]

Many species have gone to extraordinary lengths to rescue people or bring their plight to other people's attention. This honor roll includes creatures as diverse as a beluga whale, a Vietnamese potbellied pig, and a South American parrot.[26] Perhaps the best-remembered case is that of Binti Jua, a female western lowland gorilla. In 1996, at the Brookfield Zoo outside Chicago, she likely saved the life of a three-year-old boy when he fell over a railing, 24 feet down, into the gorilla enclosure. Binti Jua cradled his unconscious body and protected him from male gorillas that tried to get close. Then, carrying him along with her own infant, she gently handed him over to zookeepers at the habitat door.[27]

A Mystery Involving Persephone

Anyone who has lived with or observed animals for any length of time knows that they have distinct personalities. As with people, some of those personalities are truly memorable. Our family's Siamese cat, Persephone, was one such creature.

Michael Jawer

An extraordinary incident with Persephone will provide a striking illustration of Jung's *unus mundus*: a world that is more than human, more than temporal, and more than merely physical. It is a world in which emotion appears to be a fundamental binding force.

At age 14, Persephone suffered a stroke. She recovered to a great extent but she passed away a year-and-a-half later. In the immediate aftermath, the person in our family who was perhaps most sorrowful was Gabrielle, then age 12. She loved Persephone as much as anyone, had grown up with her, and the two often slept together on my daughter's bed. In that bed was kept another constant companion, "Daddy Hoo Hoo," her stuffed gorilla. Daddy Hoo Hoo, aka DDHH, was about Persephone's size and, also like our kitty, furry and black. Gabrielle had grabbed DDHH for comfort when I'd begun to bury Persephone and kept hold of him as we said a prayer in

loving memory of our feline friend. Later, she went to bed and took DDHH with her.

The following morning, DDHH was apparently no longer in Gabrielle's bed. We thought he might have fallen out (a common occurrence) but there was no sign of him on the floor, in the bed sheets, between the bed and the wall, or anywhere else in our daughter's room. Over the next five days, my wife made it a point to scour the house in search of the missing gorilla. Gabrielle tried to remember where else she might conceivably have left him, and we checked all those places without success.

Several nights later, my wife was consoling Gabrielle at bedtime. She remarked that perhaps DDDH had accompanied Persephone to wherever it is she was bound. Gabrielle appeared sympathetic to the storyline but made it clear "I need him here with me."

The next morning, I went into our daughter's room to wake her for camp. I sat down on her bed and, once she'd awoken, noticed a stuffed gorilla on the floor just by my foot. Thinking it must have been a "relative" gorilla (Gabrielle owned a Mommy Hoo Hoo, Grandma Hoo Hoo, etc.), I gave it to her asking which other one it was. "Daddy Hoo Hoo!" she exclaimed, and indeed it was him.

His reappearance seems truly bizarre because surely one of us would have seen the gorilla in a spot as obvious as next to the bed. In response to questioning, my wife and son assured me they had not moved DDHH. For any of us to have done so would have been wantonly cruel.

DDHH's return provided, on the one hand, a kind of closure and, on the other hand, a hint of an ineffable mystery. But the puzzle may not be as baffling as it seems. What our family members felt for Persephone—and what she felt for us—is at the core of what all mammals (and perhaps other sentient creatures) have in common. The feelings that flow within us, I contend, connect us to one another in ways both tangible and intangible.

Emotion as a Fundamental Connective Force

When I shared this story with veterinarian Michael Fox, author of the nationally syndicated column "The Animal Doctor," he related his concept of the *empathosphere*, a universal realm of feeling that can transcend both space and time.[28] As an illustration, Fox attributes the stunning accounts of pets that traverse long distances to reunite with their owners he attributes to the empathosphere. He suggests that non-human animals are more empathic than people and partake of this natural realm of feeling more readily than human beings.

The same concept has a counterpart in other terms. *Telesomatic* was coined by psychiatrist Berthold Swartz and popularized by author Larry Dossey. It refers to spontaneously feeling the pain of a loved one at a distance, without the conscious knowledge that the other person is suffering.[29]

An example is that of Melanie, 21, a college student, who was jogging across a bridge when she was hit by a truck and hurled onto a concrete embankment. At approximately the same time, 3,000 miles away, her mother jumped up in the middle of a business meeting and said to her husband,

Michael W. Fox/drfoxvet.net

"Something's just happened to Melanie." (The interruption was recorded in the meeting minutes.)[30]

The *psychosphere* is a parallel concept of Bernard Beitman, a psychiatrist at the University of Virginia. He conceives of the psychosphere as "something like our atmosphere—around us and in dynamic flux with us. We breathe in oxygen and nitrogen and water vapors, and we breathe out carbon dioxide, nitrogen, and more water vapors…Our thoughts and emotions contribute to the psychosphere and our thoughts and emotions are influenced by it."[31]

What I find so arresting about situations akin to what my daughter and my family experienced is their intimate connection with *feelings*—and not just surface feelings or feelings that quickly pass but more profound feelings that relate to the bonds between people, or the bonds between people and their pets. As Dossey points out, telesomatic events "almost always take place between people who are loving and empathic with each other—parents and children, siblings (particularly identical twins, spouses and lovers)."[32] Just as with synchonicities, these experiences arise wholly unexpected; when they do, they make an indelible impression.

There is good reason to suppose that non-human animals play as much a role in the empathosphere or psychosphere as human beings. For one thing, all mammals are remarkably similar emotionally—we come equipped with the same fundamental neurology and physiology. The variations among us are, as Darwin posited, differences in degree rather than kind. It's bad biology, therefore, to assume that a capability we possess another sentient creature does not.[33]

Biophilia and the Deep-Rooted Symbolism of Animals

Animals may be deeply embedded in the empathosphere for another reason, related to what's known as biophilia. This is a concept advanced by Edward O. Wilson and the late Stephen Kellert. Their term, biophilia, comes from two Greek roots: *bio* and *philia*. Biophilia thus means "love of life" or "love of living systems." Or if not love in the colloquial sense, then a filial connection—even a subconscious affiliation—between humans and the rest of life.[34]

Biophilia is why so many people have houseplants, or enjoy gardening or going for a walk in the woods. It explains why we long to hear the sound of ocean waves or smell the scent of the rain, watch the sunset or gaze upon cute baby animals frolicking on the internet. Biophilia is reflected in literature throughout the world, including the Bible. As Psalm 23 relates, "God maketh me to lie down in green pastures, He leadeth me beside still water. He restoreth my soul." Henry David Thoreau spoke of the "tonic of wilderness" and, in the past several years, the term "Nature Deficit Disorder" has been coined as an explanation for psychological and behavioral problems that plague people—especially children—deprived of the chance to spend meaningful time outdoors.[35]

Kellert elucidates:[36]

> This built-in appreciation of nature reflects our biological origins as a species…For more than 99 percent of our history, our fitness and survival depended on adaptively responding to the ongoing demands of the natural environment, which drove the development of our senses, emotions, intellect, and spirit.

Biophilia gives rise, in Keller's view, to the very human capacity for creating symbols. "Whenever we deal with the real in nature," he writes, "we almost simultaneously create a symbolic image and representation of it."[37] Nature is clearly the most potent source of metaphors for human beings to describe and explain life to ourselves. It is part and parcel of our everyday language. We "blossom like flowers." We "stand like oaks." We "run like the wind." We can likewise sing like birds, be as wise as an owl, as clever as a fox, busy as a beaver, speedy as a mustang, and lovely as a swan.[38]

This symbolic immersion in animalia begins early in one's life. Fairy tales, for example, typically employ animal imagery to confront difficult issues of maturation and identity, security and independence, authority and morality. Dinosaurs, for example, clearly stand in for powerful adults with their various temperaments. Such stories reveal a universal tendency to use nature as symbol.[39] Nature thus provides much more than a touchstone—it is the matrix in which our concepts of ourselves and the world around us actually form.

The late anthropologist Elizabeth Lawrence summed up the matter beautifully:[40]

> The universality of animal symbolism throughout the world and over eons of time indicates the profound significance of this inherent form of biophilia. Vestiges of the ancient beliefs of our ancestors retain their place in our minds, inextricably interwoven into the human condition because we are evolutionarily and physically, as well as aesthetically, spiritually, psychologically, and emotionally tied to our animal kin.

Animals in Dreams

For all these reasons, animals hold a perennial place in our psyche. Their attributes manifest in humanity's art, in our songs, poetry, religion, myths, and stories—not to mention our dreams.

fcscafeine/iStock

In *Dream Animals*, the late depth psychologist James Hillman cautions against pat interpretations of what a given animal appearing in one's dream "means." He advises withholding judgment, suggesting that these imaginal creatures come to us of their own accord, for their own purposes, not as the products of individual unconscious minds. According to Hillman, "We do not invent these images, arrange for their arrival, or manage their autonomy when they come."[41] What is *their* need, he asks, *their* reason for coming into our sleep?[42]

Hillman exhorts us to consider the image as animal, beginning with the "significance and power of the displayed form."[43] Such an appreciation will include all the aspects that the living animal presents. We can study what it does, how it lives, where it goes, how it looks, how it moves. In this way, the creature is not reduced to a given meaning or set of meanings, a static image or a pat interpretation. A mouse, for example, is much more than just "mousy"—it is alert, it listens intently, it's hidden, it's quick, it's timid, it's brazen, it's vulnerable, it's quiveringly alive.[44]

Ultimately, Hillman holds, animals—including dream animals—are teachers of the multiplicity of meaning. "The imagination itself," he suggests, "is a great animal, or an ark of images that are all alive and move independently."[45]

The Weave of Emotional Imagery

Let's unpack that statement—imagination as animal—as it encompasses quite a bit of significance.

First, in a neurobiological sense, it's likely that imagery is being produced continuously in the limbic part of the brain, i.e., in the older emotional structures. During wakeful consciousness, this stream of imagery is ignored by the neocortex but, at night, we are opened to it.[46] The obvious analogy is the way the stars are always "out" but we see them only when the light of the day is dimmed. Second, imagery is intimately connected with feeling—as any artist will attest. Like feelings, imagery flows: it is a weave of simultaneous textures and meanings. The particular images evoked can be highly personal, highly communal, or both at the same time. Third, as we have seen, the evidence is strong that other animals *feel* more intensively than human beings. They likely live closer to the marrow of life.

Putting this trio of elements together, the characterization of our imagination as "a great animal" implies that the background "canvas" of feeling that emanates beneath wakeful consciousness connects us with the immediacy and intensity of life, and with all the meanings that may be found both within us and outside of us.

Ultimately, synchronicities—especially those involving other animate creatures—indicate, as Jung intuited, that we are powerfully and soulfully connected in an "unus mundus"—a more than human, more than temporal, and more than strictly physical world.

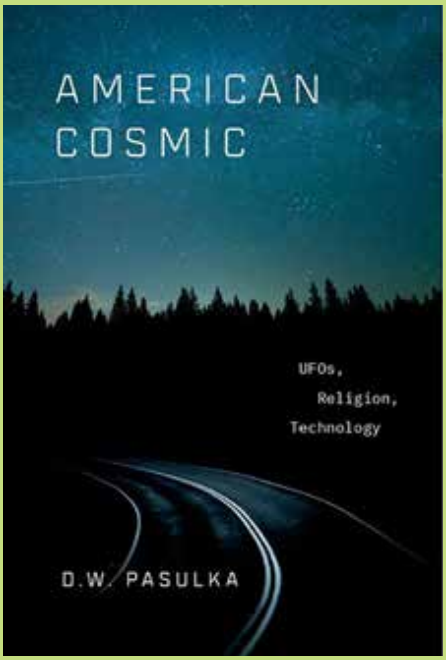
MICHAEL JAWER is a Washington, DC-based writer, speaker, and researcher. His focus is the nexus of personality development, body/mind, emotion, and spirituality. Jawer is the lead author (with Marc Micozzi, MD, PhD) of two books: *The Spiritual Anatomy of Emotion* (Park Street Press, 2009) and *Your Emotional Type* (Healing Arts Press, 2011). His papers have appeared in the *Journal of Interpersonal Neurobiology Studies*, *Science & Consciousness Review*, *Explore*, and *Seminars in Integrative Medicine*, while feature articles referencing his work have appeared in *Psychology Today*, *Spirituality & Health*, *Aeon*, *Nautilus*, *Advances in Mind-Body Medicine*, *Edge Science*, *Noetic Now*, *Epoch Times*, and *BeliefNet*. Jawer has spoken to organizations including the American Psychological Association, the Society for Humanistic Psychology (APA Division 32), and the Jung Society of DC—and guest lectured at several universities. He also blogs for *Psychology Today* ("Feeling Too Much"). He can be reached through his website: www.emotiongateway.com.

REFERENCES

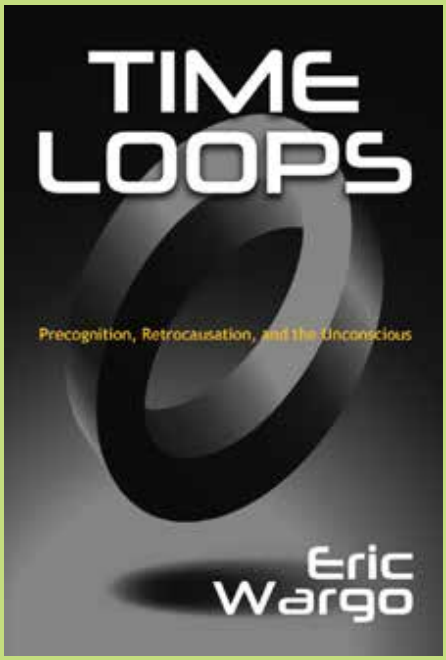
1. Abram, David. *The Spell of the Sensuous: Perception and Language in a More-than-Human World*. New York: Pantheon Books, 1996.
2. *American Heritage Dictionary of the English Language*, ed. William Morris. Boston: Houghton Mifflin, 1981, 52.
3. Damasio, Antonio R. Descartes' *Error: Emotion, Reason and the Human Brain*. New York: G.P. Putnam's Sons, 1994.
4. Humphrey, Nicholas. *A History of the Mind*. New York: Simon & Schuster, 1992, 115.
5. Jung, C.G. Synchonicity: *An Acausal Connecting Principle*. (From Vol. 8. of the Collected Works of C. G. Jung) Trans., R.F.C. Hull. Princeton, NJ: Princeton University Press, 2010. Online at JungCurrents.com. "Synchronicity: Jung Recounts the Story of the Golden Scarab Beetle." http://jungcurrents.com/synchronicity-the-golden-scarab-beetle.
6. Dean, Barbara. "Intersection: A Meeting with a Mountain Lion" in *The Soul Unearthed*, ed. Cass Adams, 113-21. New York: Jeremy P. Tarcher/Putnam, Inc., 1996.
7. Abram, David. Afterword: "The Commonwealth of Breath" in *Material Ecocriticism*, ed. Serenella Iovino and Serpil Oppermann. Bloomington, IN: Indiana University Press, 2014.
8. Tarnas, Richard. "The Gods at Play: Archetypal Powers and Patterns in the Arts." Lecture to the Jung Society of Washington, DC. Delivered Nov. 7, 2015.
9. Panksepp, Jaak, "The Chemistry of Caring" in *The Smile of a Dolphin*, 59.
10. Bekoff, Marc. *The Emotional Lives of Animals*. Novato, California: New World Library, 2007, 15.
11. Bekoff, 16.
12. Bekoff, 130.
13. Keim, Brandon. "Being a Sandpiper." *Aeon*, July 2, 2013. http://aeon.co/magazine/psychology/the-science-of-animal-consciousness/.
14. Goleman, Daniel. *Emotional Intelligence: Why It Can Matter More than IQ*. New York: Bantam Books, 1995, 9.
15. Goleman, 10.
16. King, Barbara J. "When Animals Mourn." *Scientific American* 309 (June 2013), 62–7; Moss, Cynthia. *Elephant Memories: Thirteen Years in the Life of an Elephant Family*. New York: William Morrow & Co., 1988, 269–73; Moss, Cynthia. *Portraits in the Wild: Behavior Studies of East African Mammals*. Boston: Houghton Mifflin Co., 1975, 34; Poole, Joyce. *Coming of Age with Elephants*. New York: Hyperion, 1996, 161; Douglas-Hamilton, I., et al. Behavioral reactions of elephants towards a dying and deceased matriarch. *Applied Animal Behaviour Science* 100 (2006): 87–102. http://www.appliedanimalbehaviour.com/article/S0168-1591(06)00101-8/abstract; Ryan, Myrtle and Thornycroft, Peta. "Jumbos Mourn Black Rhino Killed by Poachers." *Sunday Independent* (UK), November 18, 2007. Reprinted at http://www.zimbabwesituation.com/old/nov19_2007.html#Z9; Alpers, Antony. *Dolphin: The Myth and the Mammal*. Boston: Houghton Mifflin Co., 1960, 102; Norris, Kenneth S. *Dolphin Days: The Life and Times of the Spinner Dolphin*. New York: W.W. Norton & Co., 1991, 129-30; Fimrite, Peter. "Daring Rescue of Whale off Farallones." *San Francisco Chronicle*, Dec. 14, 2005. http://www.sfgate.com/bayarea/article/Daring-rescue-of-whale-off-Farallones-Humpback-2557146.php; Pepperberg, Irene M. *Alex and Me*. New York: HarperCollins, 2008; Morrell, Virginia. *Animal Wise*. New York: Crown, 2013, 83; Masson, Jeffrey Moussaiff

and McCarthy, Susan. *When Elephants Weep: The Emotional Lives of Animals*. New York: Delacorte Press, 1995, 229; "Steer Flees Slaughter and is Last Seen Going Thataway." *New York Times*, May 24, 1990; Goodall, Jane. "Pride Goeth before a Fall," in *The Smile of a Dolphin: Remarkable Accounts of Animal Emotions*, ed. Marc Bekoff. New York: Random House/Discovery Books, 2000: 166-7; Hauser, Marc. "If Monkeys Could Blush," in *The Smile of a Dolphin: Remarkable Accounts of Animal Emotions*, ed. Marc Bekoff. New York: Random House/Discovery Books, 2000: 200–01; Patterson, Francine and Linden, Eugene. *The Education of Koko*. New York: Holt, Reinhart & Winston, 1981, 136–7.
17. Balcombe, Jonathan. *Pleasurable Kingdom*. London: Macmillan, 2007, 62.
18. "The Science of Emotions: Jaak Panksepp at TEDxRainier." Tedx Talks, January 13, 2014. https://www.youtube.com/watch?v=65e2qScV_K8.
19. de Waal, Frans. *The Age of Empathy: Nature's Lessons for a Kinder Society*. Toronto: McClelland & Stewart, 2009.
20. de Waal, 86.
21. de Waal, quoting psychologist Lauren Wispé, 88.
22. de Waal, 92.
23. Keim, Brandon. "Being a Sandpiper." *Aeon*, July 2, 2013. http://aeon.co/magazine/psychology/the-science-of-animal-consciousness/.
24. de Waal, in Rowlands, Mark. "The Kindness of Beasts." *Aeon*, October 24, 2012. http://aeon.co/magazine/philosophy/mark-rowlands-animal-morality/.
25. de Waal, 129.
26. Kinnison, Jessica. "5 More Life-Saving Animals: Filippo the Dolphin, Binti Jua the Gorilla, and More." Gimundo.com. February 23, 2012. http://gimundo.com/news/article/5-more-life-saving-animals-filippo-the-dolphin-binti-jua-the-gorilla-and-mo/.
27. King, Barbara J. "What Binti Jua Knew." *Washington Post*, August 15, 2008.
28. Fox, Michael W., "The Nature of Compassion" in *The Smile of a Dolphin*, edited by Marc Bekoff. New York: Discovery Books, 2000, 178.
29. Dossey, Larry. *Healing Beyond the Body*. Boston: Shambhala 2001, 253-4; Dossey, Larry. Reinventing Medicine. New York: HarperSanFrancisco, 1999, 93–4, 136–7.
30. Schulz, Mona Lisa. *Awakening Intuition*. New York: Harmony Books, 1998, 106-7.
31. MacIsaac, Tara. "Feeling Another's Distress at a Distance: A Seemingly Psychic Connection." *Epoch Times*, July 22, 2014. http://www.theepochtimes.com/n3/810228-feeling-anothers-distress-at-a-distance-a-seemingly-psychic-connection/.
32. Dossey, *Healing Beyond the Body*, 254.
33. Bekoff, Marc. "Animal Minds and the Foible of Human Exceptionalism." *Huffington Post*, August 5, 2011. http://www.huffingtonpost.com/marc-bekoff/animal-minds-and-the-foib_b_919028.html; Rowlands, Mark. "The Kindness of Beasts." *Aeon*, October 24, 2012. http://aeon.co/magazine/philosophy/mark-rowlands-animal-morality/.
34. Wilson, Edward O. *Biophilia*. Boston: Harvard University Press, 1984.
35. Louv, Richard. *Last Child in the Woods*. Chapel Hill, North Carolina: Algonquin Books, 2008.
36. Kellert, Stephen R. *Birthright: People and Nature on the Modern World*. New Haven, Connecticut: Yale University Press, 2012, x.
37. Kellert, 108.
38. Kellert, 109.
39. Kellert, 122.
40. Lawrence, Elizabeth, in Kellert, 124.
41. Hillman with McLean, 24.
42. Hillman with McLean, 13.
43. Hillman with McLean, 16.
44. Hillman with McLean, 32–34.
45. Hillman with McLean, 2.
46. Taylor, Gordon Rattray. *The Natural History of the Mind*. New York: E.P. Dutton, 1979, 221-22.

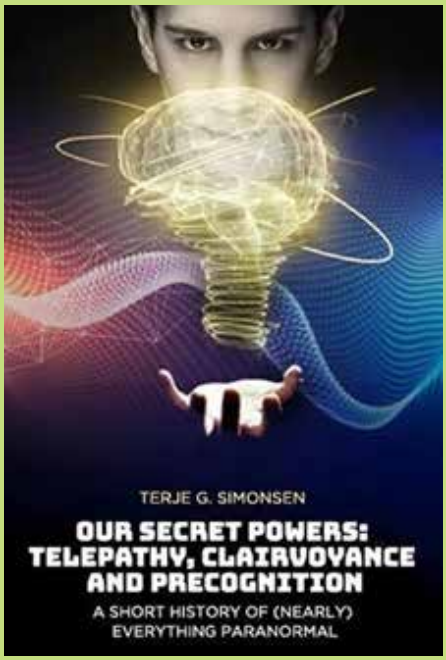
Noteworthy Books



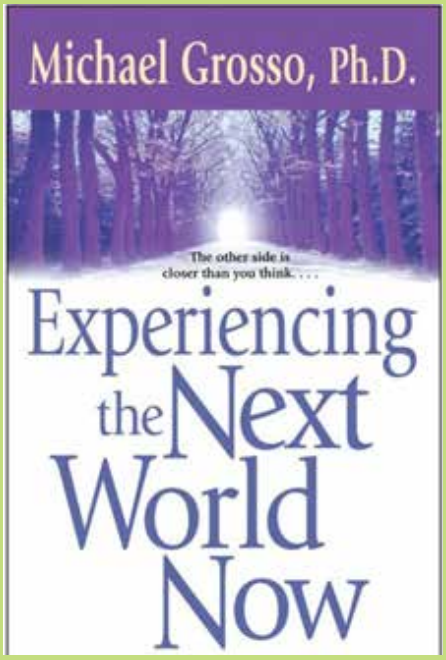
American Cosmic
UFOs, Religion, Technology
D.W. Pasulka
Oxford University Press, 2019



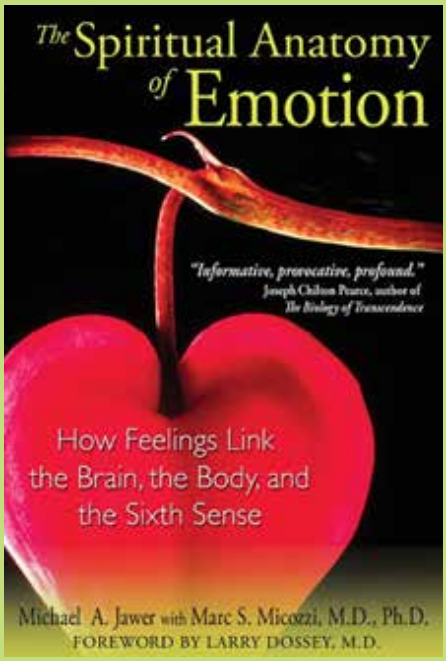
Time Loops
Precognition, Retrocausation, and the Unconscious
by Eric Wargo
Anomalist Books, 2018



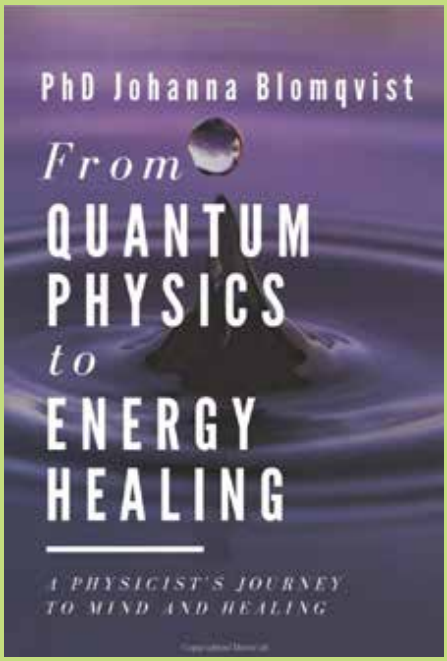
Our Secret Powers
Telepathy, Clairvoyance and Precognition. A Short History of (Nearly) Everything Paranormal
by Terje Simonsen
Pari Publishing, 2018



Experiencing the Next World Now
by Michael Grosso
Paraview Pocket Books, 2004



The Spiritual Anatomy of Emotion: How Feelings Link the Brain, the Body, and the Sixth Sense
by Michael A. Jawer
Park Street Press, 2009



From Quantum Physics to Energy Healing
A Physicist's Journey to Mind and Healing
by Johanna Blomqvist
Mindstream Publishing, 2018