

# EdgeScience

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Current Research and Insights

**You're  
Not  
Even  
in  
There  
Now**

**The Other Side  
Strange Beings  
Science to Spirits**

A publication of the

 **SOCIETY FOR  
SCIENTIFIC EXPLORATION**

## EdgeScience #40

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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.

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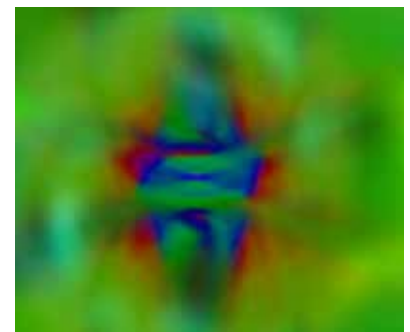
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# From Science to Spirits

**W**hat’s a boy to do? When you are a thirsty young man, bright-eyed and bushy-tailed in your first year at college in the good ol’ USA, you are typically not old enough to legally buy beer. Fortunately, there are no laws against buying barley, hops, yeast, and water! With some odd twists and asterisks, this peculiar reality is what cemented my career path as a microbiologist. If I wanted beer, I had to cut out the middle man (and the oversight) and do it myself.

Like many budding brewers I went through a phase of making some pretty foul-tasting beer. I knew enough about the process to recognize that my problem was microbial contamination, so the next reasonable step was to dig deeper into the invisible. That’s when I signed up for my first microbiology course and took on my “extra credit” project of identifying the microbes that were causing my beer problems. In hindsight, it was obvious: most of my off flavors stemmed from the fact that I was mouth siphoning liquids from one vessel to another, and thus inoculating the fermentations with lactic acid bacteria and inadvertently turning my ales into sour beers.

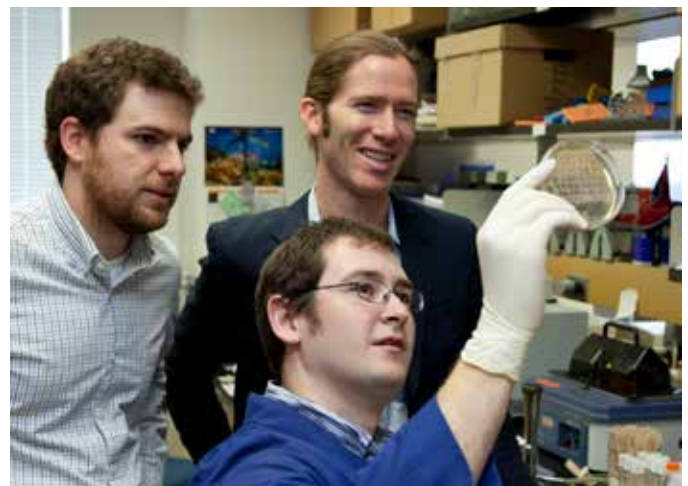
The thing that was really driven home by my explorations in beer was how much our macroscopic world is affected by the microscopic world. Before the Golden Age of microbiology in the late 19th century, it was “magic” or “God’s design” that converted our grape juice into intoxicating wine and our milk into cheese, gave zing to our sauerkraut, and killed humans by the millions, not to mention tying all of nature’s cycles into some degree of relatively stable equilibrium. The boy was hooked. Microbiology would remain the focus of my life from that time onward.

Immediately after receiving my Bachelor’s Degree in Science from Tufts University, I took my first steps into professional research, working at a local biotech company, Scriptgen Pharmaceuticals. At Scriptgen, among many other projects, we focused on discovering small molecule ligands for proteins associated with diseases, including microbial proteins central to microbe viability with hopes of developing novel antibiotics. At Scriptgen I had many great mentors and learned an incredible amount about life, business, and research, but it soon became clear that I needed to go back to school if I ever wanted to earn the scientific freedom to research what I found most intriguing.

I ended up at the University of California at Berkeley, and luckily, a top-notch microbiologist, Daniel A. Portnoy, was recruited to Berkeley just as I arrived; he ultimately served as my Ph.D. mentor. In the Portnoy lab my thesis revolved around the mechanisms by which the intracellular bacterial pathogen *Listeria monocytogenes* evades mammalian host defenses by reducing the amount it damages host cells, i.e. it uses stealth instead of brawn. From there I was awarded a post-doctoral fellowship from The Pasteur Foundation to continue research on host-pathogen interactions at the Pasteur Institute in Paris.

There my focus was on the infamous *Bacillus anthracis*, one of the bacteria that rocketed the eponymous Louis Pasteur to stardom. Overall, my research in Paris strayed a bit further away from the bacterium and brought me into the realm of immunology, researching the immune response to the bacterium in the context of a vaccine, as well as the means by which toxins produced by *B. anthracis* modulate the immune response to favor bacterial growth at the host’s expense.

With a successful postdoc under my belt I was lucky to find a new home as a tenure-track Assistant Professor at the University of Virginia School of Medicine in their Microbiology Department in Charlottesville, Virginia. There I spent about seven years building my lab and a research program, teaching medical and graduate students, mentoring Ph.D. candidates and postdocs, and raising funds to keep it all going. For those unfamiliar with the financial structure of academic biomedical research in the United States, in most cases, the Primary Investigator (PI), i.e. the head of the lab, is responsible for finding financial resources to fund the research. Funding most commonly comes from the National Institutes of Health and other governmental agencies, but also from private foundations. These funds are used to pay the PI’s and staff’s salaries, pay students’ tuition, purchase equipment and laboratory supplies, and pay the host institution for all of the resources that they provide. This adds up to quite a bit of money that the PI needs to raise each year; easily pushing a million dollars in many labs.



Dan Addison

The Glomski Lab in the Microbiology Department at the University of Virginia in 2011.

I knew early on in my training that I would spend much of my professorship soliciting research funds in one way or another, but the research funding environment slowly began to

change and by the late 2000s it was a very different landscape than when I signed on for my Ph.D. in the mid-1990s. With a bit of oversimplification, funding became scarcer due both to a broad economic downturn, but also due to what I perceive as a more pronounced anti-science/anti-academic stance in the government and society at large that shifted priorities away from pioneering basic research to more pragmatic applied research. This shift filtered into the mindset of the committees that review and decide whether a grant application will ultimately be funded, and as I see it, made these committees much more conservative and risk-averse.

This took a lot of fun out of writing grants. Once upon a time I had, to some degree, liked writing grants. A grant proposal was a very specific incentive to concentrate on the construction of a deeply researched, well thought out plan to explore something groundbreaking and fascinating on the edge of human knowledge. For me, that meant pushing into the unknown, which almost by definition meant higher risk of “failure.” Yet risk was no longer a la mode. Honestly, I knew other PIs who would perform most of the research they were proposing before submitting the grant application so that they already knew most of the results and could present the data with a high degree of confidence, thus reducing the risks that could dissuade review committees from funding the grant. So, slowly but surely, I became more and more disenchanted with the academic research enterprise and started shifting my gaze back to the roots of my career.

It can take a lot to move a person who is in a comfortable, stable, and socially respectable position. But the year 2012 made me reprioritize what really mattered to me. A strange, perhaps fortuitous, string of events made me reassess and increase the value of the years I had left to live, some events minor, some not so minor. In 2012, I turned 40. Not such a big deal, but I swear the morning I woke up 40 years old my joints creaked and popped in ways they didn’t the day before. That year I got my first “old-man’s” disease; a touch of cancer. Nothing super dangerous, but nonetheless another sign my biological clock was ticking. That was also the year I served as a jurist on a murder trial and had to look, on a daily basis, at photographs of the body of a young woman beaten to death. For better or worse, the trial gained a fair amount of national attention, which kept reporters knocking on my door looking for their next scoop but made me relive the murder in my head over and over despite my desire to put it all behind me and forget the pain. And, in 2012, I joined family and friends in a backcountry fly fishing trip in Wyoming. With a lightning strike, we ended up in the middle of what became a 24,000-acre forest fire. Upon cresting a ridge we saw the flames coming our way uphill. When you are in a forest fire, it’s really difficult to know where the boundaries are when you are on the ground, and you can always sense that an unfortunate shift in the wind can put you in real trouble. We did eventually make our way out of the wilderness, but the uncertainty of a looming threat for days on end weighs down on you and sinks in deep. Reflecting on my career I knew that if I stayed on course, I’d regret spending my limited years doing something that didn’t fill me with satisfaction at the end of the day.

The question was, what would I change into? I started to search and kept coming back to my roots in alcohol fermentation. Beer brewing, perhaps? No, I didn’t want to become a brewer despite some success winning a few amateur brewing awards. From a business standpoint I saw craft brewing somewhere much closer to a plateau; there are so many craft breweries out there these days. Wine was another possibility. When in graduate school in Berkeley my brother had become a winemaker in the Santa Cruz Mountains south of San Francisco and had decided to build what ended up being two wineries in the Sedona area of northern Arizona. In need of help and investors I loaned him a hand with both, becoming a cellar hand for a harvest season, but also an investor in the wineries with a seat on the board of directors. Working with the wineries gave me a much better appreciation for the beverage alcohol business, but honestly, the farming, seasonality, need for acreage, and exposure to the whims of a changing climate took away much of the luster for me.

What really started percolating in my head was distillation. At the production level, there was a lot of similarity to beer brewing and wine making, but there was another level of complexity layered over the top. You have to be able to make good beer to make whiskey, and you have to be able to make good wine to make brandy. Also, as a person who is always pushed by my nature to learn new things, there was a certain logic in bringing my expertise in beer and wine to the next level, which is distilling fermentations into strong spirits. The way I saw it, the craft distilling world was in a much better place than craft brewing. It was young, just hitting its rhythm in the market, and drinking trends suggested that the cocktail culture was growing beyond a fad into a real alternative to the beer and wine that had dominated in the past few decades. So, distilling it was.



Andrea Hubbell

The still at Vitae Spirits in Charlottesville, Virginia.

In hindsight, I really didn’t know what I was getting into when I made the big decision to leave academia to build a distillery. I thought I did, but as with many adventures you only know when you take the plunge. The long road to building a

spirits business is too much to chronicle in detail here. In short, I left my position at the University of Virginia on January 1, 2014. A business plan, investors, and licenses followed, so the still at Vitae Spirits didn't fire up until November 2015; almost exactly one year after securing a location in Charlottesville, Virginia. Since then we have expanded our spirits portfolio to include almost a dozen award-winning sugar cane-based spirits including rum, gin, and a number of liqueurs, opened a tasting room, and initiated distribution into Virginia, Washington DC, Maryland, and Chicago.

I have very few regrets regarding the path I took. I still love science. I read about it all the time and apply many of the principles I learned from my long years of training to my new-found profession and daily life. I am even part of a research grant to apply new technologies to the analysis of volatile chemicals as they come off the still. On a regular basis I am also asked to sit on panels and/or give presentations to give perspective to scientific trainees about the breadth of career paths they can consider with a base in science. What hurts me the most is what my career path reflects about larger societal trends and their ramifications for human welfare. More than any time in my life I see the promotion of irrational world views that rely on fantasy more than a connection to an objective reality, and the notion that if you want something to be real, you just have to believe that it is real to make it so. This spans the political spectrum and invades all walks of life. I see its roots growing from a cultural shift away from the principles of the Enlightenment that held rationalism on a pedestal. The results have been the devaluing of the scientific enterprise, loss of the

willingness to use resources to support it, and in the end, loss of talent much like me. I fear that those scientists who are most capable are the ones most likely to have the resources to move on to something else, and will do so, while the rest who stay behind will be burdened under a crumbling system. I can only hope we are at the bottom of a cycle that will soon rise again.



Ashley Cox

Ian Glomski, founder  
of Vitae Spirits

# 2020 VISION

Looking Forward

Experience, Experiments,  
and Beyond

JUNE 16-19  
2020

DURHAM  
NORTH CAROLINA  
USA

A combined meeting of the

 Parapsychological  
Association &  SOCIETY FOR  
SCIENTIFIC EXPLORATION

Julie Beischel

# You're Not Even in There Now: The Tenuous Tether Holding the Self in the Body\*

**Y**our body is clearly more than the thing that carries your head around from room to room.

The idea that you are more than just your brain or your body is reflected in the language we regularly use to describe them. When I refer to my body, my brain, my arm, or my earlobe, I am the entity that owns those parts and am more than just a collection of them. Stripped of all those parts, I would simply be a mind, a self, or a consciousness.

## The Discontinuous Body

The variable turnover rates of bodily tissues demonstrate that the body associated with the self is actually discontinuous. Neurons in the cerebellum are formed within the postnatal period. On average, microglial cells (the immune scavengers of the central nervous system) are roughly four years old but some last for more than two decades. Circulating white blood cells live on average more than a year. Intestinal epithelial cells live an average of five days; their non-epithelial counterparts live nearly 16 years. The population of insulin-producing  $\beta$ -cells in the pancreas are established by young adulthood. Skin cells turn over every four to five weeks. Sperm cells live two to three days. Tendons are formed during growth spurts and do not get renewed after that. In contrast, skeletal muscle is continuously replaced. Fewer than 50% of the muscle cells of the heart (cardiomyocytes), however, turn over during a normal life span. It can be difficult to date bones and cartilage, but estimates are that most of the adult skeleton is replaced roughly every 10 years. The number of adipocytes (fat cells) in the body is relatively stable throughout adulthood; changes in weight are reflected in the volume of those cells but not their number. Parts of the body that last a lifetime are very rare: only the lens of the eye and the dental enamel do not change after being formed.

It is clear from these cellular turnover data that the body is constantly fluctuating. These ongoing changes mean the body you have now is not the same as the one you had last year, last week, or even yesterday. Where are you in your body if it's always changing? You're not in there at all.



Thirteen-Fifty/iStock

## Little Bugs

A portion of your body isn't even yours whatsoever. The number of cells that make up your body is about the same as the number of bacteria that live there. There are 30 trillion of them and 30 trillion of you (Sender, Fuchs, & Milo, 2016). They are obviously much smaller and take up much less space than your cells, but even so their total mass is nearly half of a pound (0.2 kg). That's the equivalent of the weight of two sticks of butter crawling around on and in you.

Arguably the most important part of this microbiome (certainly my favorite) is the gut flora: the myriad species of bacteria that live in your intestines and help digest food and replace the lining of the gut. They even make hormones and neurotransmitters. This flora is so important to the health of humans that human breast milk contains various oligosaccharides (sugars) that human babies can't digest but that their gut flora gobble up. Evolution made sure human mothers' bodies used energy and resources to keep those little bugs inside their babies happy. Bacteria outside the gut also have essential jobs: they ensure the sanctity of the blood-brain barrier, affect the storage of fat, assist with bone remodeling, and educate and shape the immune system (Yong, 2016).

\* This article is based on my Banquet Presentation at the 2019 meeting of the Society for Scientific Exploration in Broomfield, Colorado.

**The impermanence of the living physical self** has been established using protocols such as what's called the carbon-14 bomb-pulse method (Spalding, Bhardwaj, Buchholz, Druid, & Frisén, 2005). The levels of the isotope carbon-14 ( $^{14}\text{C}$ ) have remained relatively constant on the planet over eons, and its radioactive decay is used in archeology to retrospectively date samples. It is not possible to date modern materials this way because the half-life of  $^{14}\text{C}$  is nearly 6,000 years. Considerable above ground testing of nuclear weapons in the 1950s and '60s, however, resulted in a large deposit of  $^{14}\text{C}$  which was quickly and evenly spread around the globe. The Limited Nuclear Test Ban Treaty in 1963 prevented any new high-yield accumulation of  $^{14}\text{C}$  and levels have dropped 50% every 11 years since then due to diffusion within the oceans and atmosphere. This allows for a universal standard to be calculated based on this bomb-curve. Genomic DNA within cells remains stable after cell division and closely parallels atmospheric levels so mass spectroscopy can be used to determine the amount of  $^{14}\text{C}$  in purified DNA and reveal cells' birthdates. Research has dated multiple types of cells in the human body.

## Body Ownership

So the body is impermanent and only partially you. Moreover, research in the area of body ownership confirms a tenuous and easily disrupted tether between self and body throughout physical life. Body ownership includes the sense of “mineness” (that this body is mine), the sense of agency (that I am initiating and controlling the actions of this body), and the sense of self-location (the experience of where I am in space) (e.g., Braun et al., 2018). The continuous, integrated stream of sensory, interoceptive, proprioceptive, vestibular, visceral, and motor signals indicates to you that you are in your body. This intermodal perceptual correspondence also allows for the body to be distinguished from other objects as belonging to the self. Only through this constant and extensive multimodal feedback are you locally situated in your body.

That system can, however, go awry relatively easily. In the condition known as somatoparaphrenia, a patient with localized brain lesions feels that a paralyzed limb is not part of their body and, in some cases, might belong to another nearby person. They may also experience the limbs of other people as their own. In epileptic patients or those with brain damage, abnormal multisensory integration may evoke a loss of unity between the self and the body (Deroualle et al., 2017). Specific situations can also disrupt self-attribution.

During orbital and parabolic flights involving microgravity, an inversion illusion may occur. This is experienced as the body being upside-down compared to the person's surroundings or vice versa. These illusions can be so compelling that people adopt an inappropriate position when they are preparing for the end of the microgravity situation and this has led to major accidents (Blanke, 2012). In addition, during

mindfulness meditation, body ownership weakens, and the sense of bodily boundaries becomes more flexible (Ataria, 2015).

Beyond clinical and situational influences, this connection between the self and the body is also easily disturbed in the laboratory. If conflicts between visual input and tactile sensations or between visual input and motor-proprioceptive signals are introduced, the brain is easily fooled into thinking that the self is now anchored elsewhere. These experimentally induced illusions “demonstrate an astonishing malleability” in body ownership (Braun et al., 2018, p. 13).

The rubber hand illusion was originally described in 1998 (Botvinick & Cohen) but has been extensively replicated since then. In general, a participant is seated at a table, and her, for example, right arm is shielded from her view. A rubber life-sized model of a right hand is placed on the right side of the table where the participant can see it. The rubber hand is stroked with a paintbrush in synchrony with paintbrush strokes to the person's own hidden hand. The brain quickly recalibrates to account for this visual and tactile input and now understands the rubber hand to be “mine.” When participants are asked to touch, with their left hands, the underside of the table where their right hands are, a proprioceptive drift occurs: they err closer to the rubber hand than their actual hand. This illusory ownership for the fake hand is only disrupted if the fake hand is placed in a location or orientation that is incongruent with the participant's own hand. Otherwise, if a brain is appropriately doing its job of incorporating incoming signals, it will assign ownership to that rubber hand. “That's just a hand,” you might be thinking. “It wouldn't work with a whole body.” And you would be utterly wrong.

**“This extensive body of research indicates that our sense of body ownership is highly flexible. The self is only casually tethered to the body and requires constant feedback to remain there.”**

The sense of ownership of a part of the body and the sense of full-body ownership are essentially the same, both being highly flexible. In the full body or body swap illusion (Petkova & Ehrsson, 2008), immersive embodied virtual reality is used to align synchronous multisensory and motor stimuli with the first-person perspective of an avatar. This is accomplished through computer generated imaging or stereoscopic video of real people.

Participants in these experiments report feeling as if they were located outside their body, that someone else's body was their own, or that they had two bodies. Proprioceptive drift towards the virtual body also occurs (Cowie et al., 2018). Experimental conditions have involved swapping with various bodies of different shapes, colors, and ages, as well as objects, plastic mannequins, dolls, and digital avatars including animals (Bertrand, Guegan, Robieux, McCall, & Zenasni, 2018; Krekhov, Cmentowski, & Krüger, 2018). Subjective anxiety resulting from threats directed toward the virtual body has been physiologically demonstrated through skin conductance responses (Petkova, Khoshnevis, & Ehrsson, 2011) and participants' pain thresholds are increased during the full-body illusion (Hänsell, Lenggenhagerl, von Känell, Curatolol, & Blankel, 2011).

The body ownership illusion can be induced by presenting only virtual gloves and socks moving in synchrony with the participant's own movements. In fact, body ownership can even be induced with an entirely invisible body when

**“...the ideas that mind can transcend space and time and can survive the death of the body are not actually surprising considering that the relationship between the mind and the body is flimsy at best during physical life. It's a wonder it stays in there at all.”**

participants observe a paintbrush moving in empty space defining the contours of the invisible body while receiving simultaneous touches on the corresponding parts of their actual body (Kondo et al., 2018).

This extensive body of research indicates that our sense of body ownership is highly flexible. The self is only casually tethered to the body and requires constant feedback to remain there. Taking these findings into account, the concepts that the self exists beyond the physical body and can acquire information and affect physical matter non-locally seem quite logical.

### **Psi and Survival**

The evidence for the non-materialist, non-locality of consciousness continues to grow and gain more mainstream attention. The term “psi” (the Greek letter  $\psi$ ) is an umbrella term including the psychic functions of telepathy, clairvoyance, precognition, and mind-matter interactions (psychokinesis). In an American Psychological Association (APA) publication involving a “comprehensive integration of current experimental evidence and theories” about psi phenomena referencing more than 125 published works, Etzel Cardeña, Thorsen Professor of Psychology at Lund University in Sweden, concluded that an extensive amount of quality research exists providing “cumulative support for the reality of psi, which cannot be readily explained away by the quality of the studies, fraud, selective reporting, experimental or analytical incompetence, or other frequent criticisms” (2018, p. 663).

This extensive collection of data implies that the mind can function separately from the body and can transcend space and time. That is, psi is real.

The empirical evidence suggestive of the survival of consciousness after bodily and brain death (or simply: survival) further clarifies the limitless nature of mind and self. Evidential survival data come from several areas of research including reports of children with verifiable past life memories, veridical information acquired during near-death experiences involving brain death, and accurate and specific information about deceased people and animals reported by psychic mediums under controlled laboratory conditions. The following are two stories representative of the types of phenomena that support the reality of survival.

An Australian paramedic, “Frank,” shared the following story online (Emergency Medical Paramedic, n.d.). A 49-year-old male developed chest pain and called for an ambulance. Frank and his partner were the first on scene. By the time they arrived, the man was in cardiac arrest and had collapsed and stopped breathing. They applied a monitor and found that he was in asystole, which “means that there is absolutely no electrical activity and is usually a sign that the person has been in cardiac arrest for a while,” Frank explained. Patients in this situation will most likely die. Frank and his partner called for back-up, commenced CPR, intubated the patient, and administered IV adrenaline. Their back-up arrived shortly and they continued the resuscitation efforts.

They worked on the patient for 20 minutes without any change. One of the senior paramedics said, “Okay, what do





Spectral-Design/Stock

you guys reckon? Shall we call it?” Frank was working with a new rookie paramedic and said, “No, he can use some more experience with CPR. Let’s run this until we finish the asystole protocol all the way through,” which is 30 minutes of CPR. The senior paramedic laughed and said, “Hey, if you want your rookie to get more experience in CPR, there’s a mannequin back at the station. He’s got just as much chance of resuscitating it as resuscitating this guy.”

Frank noted: “Almost as though the out-of-body person had heard that and decided, ‘Hey, no, I don’t want to die just yet,’ we had a miraculous, spontaneous return of circulation. This virtually never happens, and patients still rarely live long-term after this much down time.”

They expedited the patient to the hospital. Two days later they found out that the hospital had stented his heart and that he had been extubated and was neurologically intact in the cardiac ICU. “No way,” we think, “good for him!” Frank noted.

That was the last they really thought about it—and probably would have been the last they ever thought about him—if it wasn’t for the knock at their station door one early morning. Looking at Frank, the man at the door said, “Hi, Frank. My name’s John. I believe we met a couple months ago.” Frank looked at him and tried to figure out when he treated him and for what and just couldn’t place it. The man noted Frank’s confusion. “Last time we met my heart wasn’t working. In fact, they tell me it had stopped completely.” Frank then recognized who he was and invited him in.

They got to chatting, and eventually John said, “I want to thank you for giving me an extra 10 minutes of CPR... even if it was only so that your rookie could practice CPR.”

“Sorry,” Frank said, instantly aware of how close this man was to dying because they were going to quit early.

“I was there, you see,” said John. “I saw the whole thing and I remember Jack saying that he wanted to ‘call it’ and you

saying that your rookie needed extra work on his CPR anyway, so you may as well keep going.”

Frank was shocked and fascinated at the same time. “Really? What else do you remember?”

“Well,” John said, “I remember that the other paramedic suggested that there would be just as much likelihood of resuscitating the mannequin back at the station as resuscitating me, and it was about then that I realized that this was serious and that if I wanted to live I was going to have to get back in that body. The next thing I know, I’m in the hospital a few days later.”

After recounting this story to other paramedics, Frank cautioned, “Always do your best as though someone is watching because sometimes someone is watching. Never say things about dead people that you wouldn’t say to them if they could actually hear you.”

The second story is one from a medium. I have previously presented and published research examining the accurate and specific information about the deceased reported by psychic mediums under controlled laboratory conditions. I have many stories involving murders and suicides from the Windbridge Certified Research Mediums on my team, but I thought I should share one that was a little more light-hearted here. Windbridge medium Laura Lynne Jackson shared the following story with me, including verification from the sitter in her own words.

Laura recounted: “One sitter’s dad came through repeatedly and told his daughter to stop using the 2-in-1 shampoo on her daughter (his granddaughter). He kept bringing it up over and over.” The sitter found this communication from her father to be a “distraction” during the reading, but it “ended up being the key to ending my daughter’s chronic skin condition. Doctors had always told me it was viral” with no treatment options. “We stopped the 2-in-1 just because my dad had been incredibly insistent and wouldn’t get off the topic.

My daughter's condition of one and a half years cleared up in a week and has never come back."

These two stories are representative of the various phenomena demonstrating survival, which are backed by extensive investigative and laboratory research examining this characteristic of consciousness.

Again, the ideas that mind can transcend space and time and can survive the death of the body are not actually surprising considering that the relationship between the mind and the body is flimsy at best during physical life. It's a wonder it stays in there at all.

These seemed to me like logical conclusions to draw from the mainstream body ownership and cellular turnover research and the laboratory evidence for psi and survival. However, Google Scholar searches refuted this hypothesis. A search of "body ownership" produced over 2.4 million results and a search of "survival of consciousness" produced more than 1.3 million. However, "Your search – 'body ownership' 'survival of consciousness' – did not match any articles."

In conclusion, the body is fluctuating and only partially you. Additionally, our sense of body ownership is highly flexible; the mind is only tenuously bound to the body. Finally, mind can transcend space and time and survive the death of the body.

I wonder how the world would be different if we really accepted these realities:

You are not your body.

Mind is limitless.

Death is not the end.

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Jose Hernandez

# The Other Side...in Living Color

**A**t approximately 2:00 a.m., January 5, 2000, I died in the emergency room of Coral Springs General Hospital in Florida. In my mid-forties and in otherwise excellent health, it was the last thing I expected, and I was in no way prepared for what was to come. I remained clinically dead for close to five minutes. Although I had never previously had any kind of religious or spiritual inclinations and I fought for my life with every ounce of energy I could muster, I found myself in the most beautiful place, and it was very painful for me to leave there and return. I'd had what I later learned was called a Near Death Experience (NDE).

One of the aspects that had a tremendous impact on me and ultimately on my recovery and my life post NDE was my

experience of color in that space, which I felt had consciousness and purpose. I credit my ability to remember and recall this “living color” as being what kept me sane during my grim prognosis and long, grueling rehabilitation. Once I left the hospital and was well enough to sit a desk, I began to try to recreate the colors I had seen. I wanted to have something I could touch, something I could share with others, something I hoped could eventually demonstrate where I had been. One of the primary reasons I wanted to depict this visual journey is that I wanted to try to share the sense of well-being and peace I experienced on the other side, and words couldn't do it for me. I hoped that maybe my art could help others heal.

This is my story.



Surf: A space of transfusion and transition

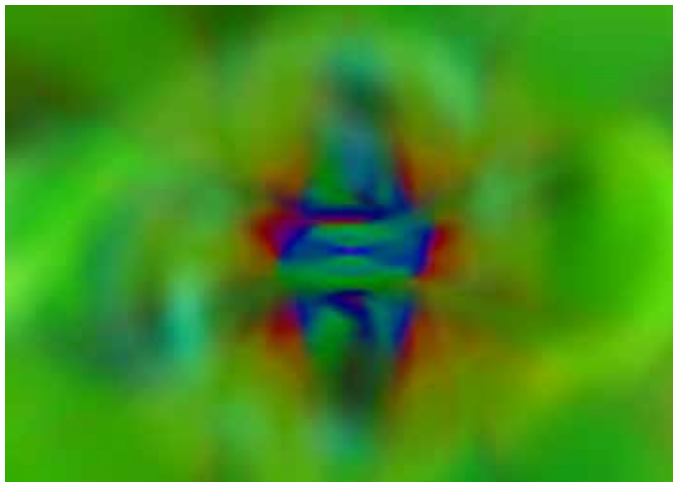
## The NDE

I had been taken to the hospital by my son in the middle of the night. Believing I had simple complications after breaking several ribs a few weeks earlier, I told him not to wait and sent him home. I figured I had a perforated lung or something like that, as I was having a lot of difficulty breathing and it was getting worse over time, much worse, instead of better. As I waited in the bay of the ER, struggling to breathe, I battled with myself over whether I should push the button to call the nurse, as instructed, or whether I should tough it out “like a man.” Cultural conditioning won over my survival instinct, so I waited. When a nurse finally popped her head round the curtain to check on me, she gasped and hit the code blue button on the wall. Within a minute the space was filled with a medical team frantically trying to keep me alive. While the doctors pumped me full of steroids and other meds to keep my lungs functioning, my heart accelerated to the point that it simply gave out and stopped. That was the end of life as I knew it.

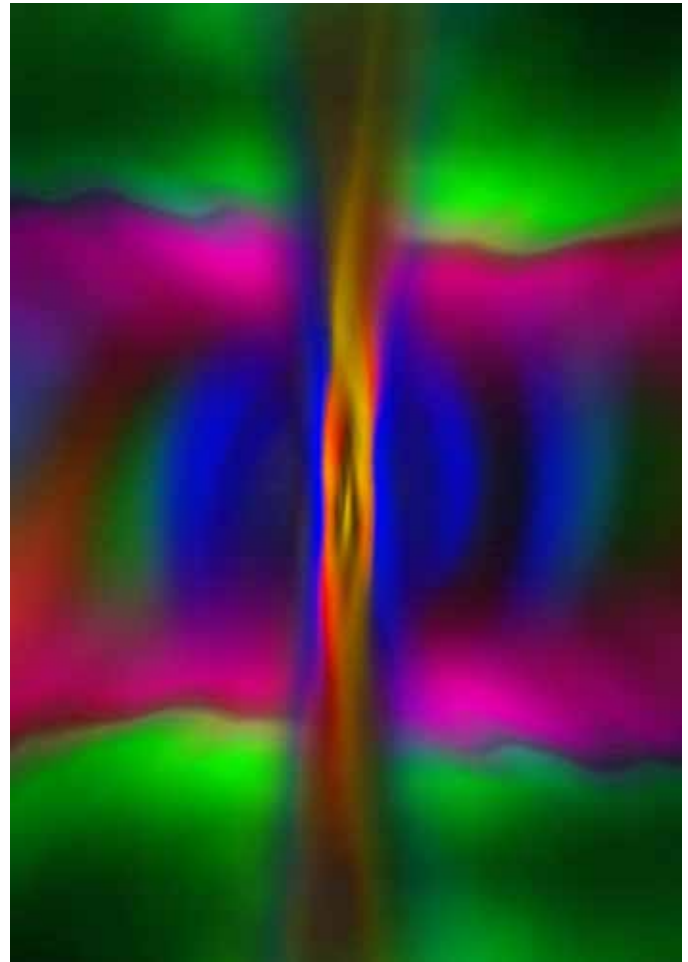
My NDE experience was ineffably beautiful. It was foundation shaking and life transforming. Like many others, I struggled to understand what I had experienced as it did not fit with my worldview up to that point. I felt at one with everything, at utter peace and surrounded by love. I eventually recovered; it took six weeks in the coronary care unit, three months in the hospital, and three years of gradual physical recovery. I saw several psychiatrists following my NDE, as I truly believed my mind had broken and hoped someone could give me a pill to let me go back to the way I used to be. There was no magic pill. Slowly I began to accept the changes in myself and understood that, though I was different, I wasn't crazy.

## Life and Art

Prior to that experience I had been an electrical engineer, though I did not feel an affinity for the profession. My passion for 20 years was photography. I always had a keen awareness of light, color, and movement and a knack for composition. I grew up in the South Bronx in the 1950s and 1960s, and our



Flare: Creative life force



Strand: Thread that is one with all dimensions

family had very little money. I didn't have art training, I definitely didn't see myself as an artist.

But I see now how these life paths have come together to form the foundation on which I now stand. Although my art form is now very different, I can see how my life's journey is reflected in my art: it is still always and only about light, color, and movement. Over time and with experimentation, I began to create visual meditations that reflect the colors I had experienced in the NDE. Every piece has a focal point that engages the sense of sight and draws the viewer into a “fourth dimensional” journey through the layers of the painting.

My work is my attempt to capture and recreate the beauty, vibrancy, and tranquility of the living' colors I saw on the other side. Many experiencers have a component of color and light integrated into their journey or experience. I have also known NDErs who feel a kinship with the art, as it, in their words, reconnects them with their own experience; it causes them to relive the colors from their own journey. I hope that my art now takes the viewer on that journey with me.

My art is mixed media expressed in a digital format. I create them from my own photographs which I modify and layer, layer upon layer. One picture might have as many as two or three hundred layers. Digital technology is the closest I can get

to replicating the power and “life” of the color I experienced. When I am creating I seem to go into another space and have a strong sense of pulling the essence of the image from that place into this one. I know the image is complete when I feel it; I believe they each have their own life and energy.

My art has found its way into exhibits in fine art galleries across the US. It has also been included in personal and corporate collections worldwide. Of great importance to me are the pieces that serve in permanent installations in hospitals and healing centers across the US, including several pieces in the Cleveland Clinic’s permanent collection.

I have done quite a lot of research subsequent to my dying experience into how color and art affect people. Since my NDE nearly two decades ago, I have seen a growing interest from the medical and scientific communities into how art qualitatively and quantitatively affects the experience and outcomes of hospital stays and procedures. We now have evidence that art and color in the healthcare environment helps reduce stress, lowers cortisol and blood pressure, and decreases pain levels, drug consumption, and length of stay for patients, while increasing their comfort levels and immune response. Not surprisingly, art has also an effect on the medical staff, improving job satisfaction, team work and collaboration, relationships with patients, and gender and cultural empathy. We’ve all seen the movies where the genius wonder-surgeon performs miraculous feats in an operating room bathed in classical music. It just makes sense instinctively; now we’re beginning to have the data to support that, we are starting to see the healthcare environments embrace the concept.

### Soul Flight

Immersive Arts, the company I have co-founded with my wife, Anastasia, and Ross Waddell, fellow group facilitator for the International Association for Near Death Studies, was formed to provide intentionally healing fine art to healthcare facilities but also as a research tool. We are in the early stages of putting together an incubator for research into art, color, and healing, starting with the Penticton Regional Hospital, which is located in the interior of British Columbia. The second incubator is slated to be based in a major research hospital in Florida.

I have approached this work from the perspective of my own journey, and I am attempting to share the healing quality of color and light that I am so grateful to have experienced. But we are also providing a platform to feature the healing work of other fine artists where this can be further explored and studied. We need well conceived studies to provide solid quantitative data, and I believe the rewards for patients, medical staff, and the healthcare system as a whole will be beyond our current imagination. Because that’s been my own experience.

My NDE experience was almost 20 years ago. Since then my lungs have largely recovered and my cardiologist has told me many times that he doesn’t know how I left the hospital alive. I genuinely believe one of the main reasons that I was able to survive that experience is because I would escape from my hospital room by remembering the colors I had seen; via that memory, without any visual aid, I would take myself back

into that place. In that space I found some escape from the stress and pain of my condition and relief from the fear and anxiety my prognosis held. That “soul flight” and relief, simply, is what I am trying to capture in some small way and share with everyone; that opportunity to escape to a safe and healing space, even if just for a few moments, enabling our body and spirit to renew and replenish and find a measure of peace.

It is difficult for me to put into words the feeling of utter love and complete safety I felt on my journey, but that is my desire, to try to bring a taste of that love, joy and peace, through the portal of my own paintings and others’, into the lives and homes of the people that experience them here.



**JOSE HERNANDEZ** began creating art as a meditative tool in 2004. His work is now in permanent installations in the Cleveland Clinic Hospital’s collection, the Nicklaus Children’s Dan Marino Outpatient Center in Florida, and other healing centers across the US. The newest installation is in the Mental Health and Addiction Wing at the Kelowna Health Center in British Columbia, Canada. Jose is the co-founder of Immersive Arts, a collaborative of art, design and medical professionals. Jose currently lives in the Okanagan Valley in BC with his wife, Anastasia, and youngest daughter, Gabrielle, travelling regularly to speak on his near death experience and on the subject of art as a conduit for healing. For more information about Immersive Arts, visit [innerimmersion.com](http://innerimmersion.com), or contact Jose at [info@innerimmersion.com](mailto:info@innerimmersion.com).

Matt Colborn

# Strange Beings: A New Look at Entity Experiences



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Encounters with ghosts and other entities seem to be a perennial part of the human story. Despite—or because of—their bizarre, baffling, and contradictory features, they have been of great interest to parapsychologists for more than a century, mainly because they seem to be telling us some profound things about consciousness and reality itself. More recently neuroscientists with an interest in psychedelics and altered states of consciousness have themselves seriously considered the notion that such entities might be indistinguishable from reality.

One early pioneer of the study of entity apparitions was the British mathematician, physicist, and pioneering radio engineer G.N.M. Tyrrell. While preparing for a lecture he had been asked to give to the Society for Psychical Research (SPR) in 1942, he ploughed through the volumes of material the Society had amassed on apparitions. He was struck by two things. The first was that the evidence presented by spontaneous narratives was much stronger than he had previously realized.<sup>1</sup> The second realization was that apparition experiences seemed to throw a “searchlight into the workings of human personality . . .”

What kind of experiences excited Tyrrell? Here’s one example, taken from his *Apparitions* book.

About six weeks after the death of Captain Towns at his residence near Sydney in Australia, the narrator’s wife entered one of the rooms about 9 p.m., together with a Miss Berthon. The gas was burning. “They were amazed to see, reflected as it were on the polished surface of the wardrobe, the image of Captain Towns. It was . . . like an ordinary medallion portrait, but life-size . . . Whilst they were looking and wondering . . . Miss Towns came into the room, and before either of the others had time to speak she exclaimed ‘Good Gracious! Do you see Papa!’” One of the housemaids, happening to pass, was called in and said, ‘Oh Miss! The master!’ . . . The butler and nurse were called and saw the image. Finally Mrs Towns was sent for, and, seeing the apparition, she advanced towards it with her arm extended as if to touch it, and as she passed her hand over the panel of the wardrobe the figure gradually faded away . . .<sup>2</sup>

The Captain Towns case throws up many typical problems. There is the dramatic, almost theatrical nature of presentation. There is the report’s dream-like, fantastic tone. There are also the difficult, probably now unanswerable, questions about the witnesses’ emotional needs and motivations. And yet if we assume that this is a reliable account of the incident, then it cannot be easily dismissed as a dream or hallucination because it was witnessed by six people!

This case is typical of its kind. In its early days, the SPR collected a wide range of reports of what were termed “veridical hallucinations.” These included several hundred cases of what became known as “phantasms of the living.”<sup>3</sup> These were the apparitions of people, often seen by a friend or relative who might be hundreds or even thousands of miles distant, who were in a crisis or at the point of death. Here’s one example:

I sat one evening reading, when on looking up from my book, I distinctly saw a school friend of mine, to whom I was very much attached, standing near the door. I was about to exclaim at the strangeness of her visit when, to my horror, there were no signs of anyone in the room but my mother . . . A day or so after this strange event I had news to say my friend was no more. The strange part was that I did not even know she was ill, much less in danger, so could not have been anxious at the time on her account, but may have been thinking of her; that I cannot testify.<sup>4</sup>

A large number of similar cases were published in the two-volume *Phantasms of the Living* in 1886. These “living ghosts” were seen as evidence for telepathy between two people. However, there was disagreement over how some cases should be interpreted. Collective apparitions, like the appearance of Captain Towns, provided a stumbling block to the idea that ghosts could be purely telepathic. For multiple witness cases, there seemed to be two main possibilities—what philosopher and parapsychologist Stephen Braude has recently termed telepathic (subjectivist or “eye-of-the beholder”) theories, where hallucinations are spread telepathically by “contagion,” or objectivist theories, where what is perceived is somehow present at the location of the experience.<sup>5</sup> (Conventional explanations like *Folie à deux* seemed insufficient to account for the best cases.)

Edmund Gurney, one of the authors of *Phantasms*, tended to accept an “eye-of-the-beholder” interpretation but, as Tyrrell notes, “not with any great enthusiasm.”<sup>6</sup> Frederic W.H. Myers, founder of the Society for Psychical Research, favored the objectivist theory. Although he rejected the idea of a physically present apparition, he claimed that collectively witnessed ghosts must occupy a quasi-physical, “metetherial” space. Witnesses, he thought, do not see ghosts physically but somehow mentally perceive “objects” in this space by some unknown form of “supernormal perception.”<sup>7</sup>

### Tyrrell’s Theory of Apparitions

Sixty years later, Tyrrell formulated a theory of his own. In *Apparitions*, he begins with a discussion of what was then known about perception. Ordinary perceptions, he suggested, were a “mix” of physical attributes and our experience of them through our senses. A brick might appear to us as a colored patch of red (a visual image). It might also feel rough to the touch. This appearance is due to its physical presence.

Hallucinations, he suggested, are just like these ordinary perceptions except that they lack a physical presence.



G.N.M. Tyrrell

Perhaps there was something within us that could produce visual images that were exact imitations of normal perception. According to the evidence, these “imitations” seemed able to fit themselves into an ordinary scene seamlessly, moving around obstacles and even appearing reflected in mirrors.<sup>8</sup>

What was the source of these apparitions? Many of these hallucinations, he claimed, are dramatized expressions of what he termed “idea-patterns.” This idea-pattern might originate in the witness, or somewhere else.

Tyrrell suggested that apparition experiences depended upon an “agent” and a “percipient.” The “agent” generally supplied the idea-pattern and would interact with the “percipient” through what he called a “mid-level” of personality. This mid-level of personality he conceived purely mentally and is, importantly, non-spatial. The mid-level also has the capacity to act like a “stage-carpenter” and embody the “idea-pattern” as a sort of theatrical performance in the place where the percipient is positioned.

This process can be illustrated by the following, fictional example. Imagine that person A is in a boat on a stormy ocean and that the boat is sinking. Meanwhile, person B is dozing at home on the sofa. Person B is disturbed and on the point of waking sees the dripping and distraught-looking figure of person A standing over her. This figure is realistic, blocking objects behind her as if she were physically present. After a few seconds, this “living ghost” disappears.

Tyrrell thought that both the agent and the percipient collaborate on this sort of “apparitional drama” which is “clearly in most cases a joint effort. . . .” This collaboration is possible because in addition to being non-spatial, the mid-levels of personality are also supposed to be in some sense shared between people, and to go beyond the boundaries of the self.

This leads to an alternative interpretation of collective apparitions. Tyrrell thought that they were a product of a “dramatic collaboration” between personalities in the mid-levels of personality. What was relevant was not the person’s presence in physical space; their relevance was as spectators to the drama. The Captain Towns case can serve as an example of this. Two people were initially involved, who then drew in others to witness the spectacle of Towns’ reflection on the wardrobe. So, in a collective case, a producer provides an “idea-pattern” which becomes the “germ” of a drama that is enacted by the mid-levels of the personality corroborating. “[The] explanation of collective [perception] lies . . . in the fact that the spectators, by their physical presence, become relevant to the theme of the apparitional idea-pattern and, because relevant, are drawn into it.”<sup>9</sup> However, the Towns case raises deeper issues for Tyrrell’s theory. Who was the agent? One of the living witnesses? Or, just maybe, the deceased Captain Towns?

### Is Reality Hallucinatory?

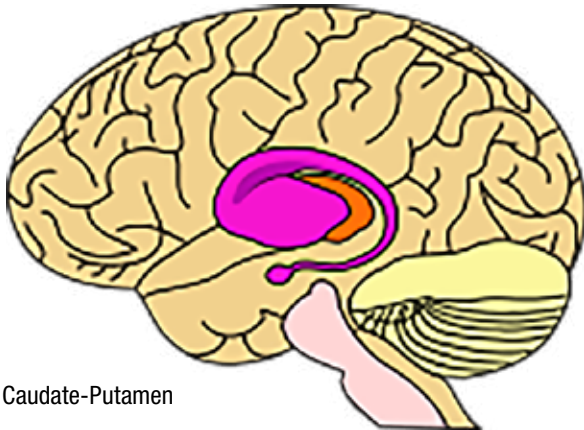
Research on hallucinations has moved on very significantly since Tyrrell’s day. It is now acknowledged that Tyrrell was correct to assert that they can be indistinguishable from reality, and some neuroscientists have taken this idea to shocking extremes.

In 2017, the consciousness researcher Anil Seth claimed that experience itself was basically a hallucination.<sup>10</sup> If a hallucination was a kind of uncontrolled perception, he suggested, then the perception of our immediate, ordinary reality might also be a kind of hallucination. The hallucination would be a controlled one because, in everyday perception, the brain's predictions are restrained by sensory information.

Seth believes that we hallucinate all the time, and that consensus reality really is just when people reach agreement about their hallucinations. When perceptions are not constrained by sensory information, the brain will be prone to hallucinating freely, as in flotation tank experiences where sensory input is dramatically reduced.<sup>11</sup>

Researchers like Seth generally assume that hallucinations only happen “in the brain,” but many of the experiences collected by parapsychologists do seem to challenge that assumption. Tyrrell's theory was created in a time before the advent of neuroimaging machines and there's no doubt that it has a strongly dualistic flavor. He thought that while hallucinations might lead to a modification of “brain traces,” he also suggested that some might also be somehow purely “mental.”

Today, we would tend to ground the perception of hallucinations more firmly in brain function, but as the researcher Patricia Boksa notes, “. . . neural processes can currently only be shown to correlate with, not to definitively cause, hallucinations.”<sup>12</sup> The puzzle for parapsychologists would then be how the neural correlations of hallucinations might relate to Tyrrell's posited non-spatial “level” of consciousness.



The Caudate-Putamen

John Henkel/LeevanJackson

Hallucinatory experiences do seem to have some odd neurological features. This can be seen in the case of Ruth, who was investigated by the psychiatrist Morton Schatzman. Ruth had gained the unusual ability to generate hallucinations at will. Neuropsychiatrist Peter Fenwick ran an EEG experiment with Ruth that involved flashing a light in her eyes. Ruth was asked to produce an apparition of her daughter. The production of this hallucination seemed to inhibit her visual evoked response—exactly as if a real person were sitting on her lap.<sup>13</sup>

Most exciting are recent reports that “experiencers” of “Anomalous Mental Phenomena” (hallucinations, seeing beings and orbs, or hearing messages) might show differences

in a part of the brain called the caudate-putamen.<sup>14</sup> This brain-difference might possibly be an explanation for why some people seem more prone to “entity experiences” than others. The caudate-putamen is in the basal ganglia and seems to be involved with intuition and higher cognitive functioning. Microbiologist Gary Nolan, one of the researchers, claims that the patients who were prone to anomalous experience had a higher density of neuronal connections between the head of the caudate and the putamen.

These studies hint that differences in brain functioning may be important in ways that Tyrrell could not have suspected. They also raise difficult questions for his theory. How might a non-spatial aspect of consciousness be related to localized brain function? Can we square modern conceptions of the “hallucinating brain” with some kind of non-spatial idea of consciousness, or must either or both theories be modified?

### Entities and Altered States

One avenue of investigation involves the strong link between hallucinations and Altered States of Consciousness (ASCs). The founders of the SPR were fully aware of this fact. In *Phantasms*, there's a long discussion of “borderland cases,” where apparitions had been seen in the hypnogogic state that precedes sleep. They wrote:

There are certain reasons why this borderland might be expected to be rich in telepathic phenomena. An impression from a distant mind may or may not originate a sensory hallucination; but if it does so, this seems more specially likely to occur at any season, or in any state of the organism, which happens to be favourable to sensory hallucinations in general.<sup>15</sup>

They continue with a description of the kind of hallucinations typically encountered as one drifts off into sleep: “they seem to begin with an appearance of bright points and streaks which then form a more or less complicated pattern, or develop into a scene or landscape.”<sup>16</sup> So hypnogogia, they reasoned, seemed a natural place to find telepathic apparitions.

This might not be only because such states are hallucination-prone. Myers speculated that the ordinary, waking ego might need to be subdued in order for material from deeper, transpersonal layers to bleed through. (He called these deeper layers the “subliminal mind,” which is very similar to Tyrrell's “mid-layers of personality.”)<sup>17</sup> Today, this seems to be partly confirmed by the observation that the Default Mode Network (DMN), roughly the brain-correlate of the ego, does seem to decrease in activity during times of “sleepiness.”<sup>18</sup> Perhaps when our typical, loud, busy workaday mind is quieter, deeper and stranger experiences can emerge.

But it's important to remember that apparition experiences can also occur when people seem fully awake. Take the following case:

In 1958 Violet . . . was living on her own with her five year old son Christopher John. One evening as usual



she sent him up to bed to undress, and then followed a few minutes later to tuck him in bed, only to find him staring with utter bewilderment at the floor near the fireplace. “Look Mum,” he whispered in an awed voice, pointing to a large knot hole in the boards. Violet looked, not expecting anything but some trivial mark, and then, almost too astonished to believe her own senses, saw a pale blue, but unmistakably human eye staring up at her. She and Christopher stood transfixed . . . as the eye, which at first seemed to be frightened and then cautiously watchful, glared unblinkingly upwards.<sup>19</sup>

So it seems that apparitions might be classed in two broad categories: they might be encountered in ASCs, as in hypnagogia, dreams, or Near-Death Experiences. Alternatively, dream-like material might sometimes intrude into everyday consciousness. Such “intrusions” might be often be purely hallucinatory, but might also be collectively perceived.

### Apparitions Go Psychedelic

Today, the focus tends to be on experiences from profoundly unusual realms of consciousness. Parapsychologists have been forced to broaden their attention beyond classical “ghost” sightings, partly because of a renaissance of research into psychedelic drugs. This research has foregrounded some very peculiar experiences.

In 2015, in Tyringham Hall, England, there was a symposium on the “zoo” of strange entities that have been reported under the influence of Dimethyltryptamine (DMT) and other psychedelics. This particular drug, variants of which have been taken in the Amazon for thousands of years, seem to facilitate encounters with many exotic entities. These entities often have a high level of reality for witnesses:

Countless numbers of eyeballs were looking at me. They were the most evil things I have ever seen. They were all on these snakelike bodies that were weaving back and forth. I reopened my eyes and saw the eyes and the worms all over me and on the ground.<sup>20</sup>

This is an example of the many-eyed monster which has been reported by many independent witnesses in the context of psychedelics and also in sleep research.<sup>21</sup> The “many-eyed” monster has a deep cultural history and appears in Greek Myth as Argus, in Tibet as Za, and even in SF literature as Lovecraft’s shoggoth. British Psychologist David Luke, who has witnessed as well as studied the many-eyed monster, has suggested that although there are several possible physiological or brain-based explanations, that it is important not to devalue “the complexity and cultural significance of this experience.” He claims that it “extends itself much further than the current explanatory power of neuroscience.”<sup>22</sup>

At the conference Luke speculated that DMT entities may be “fourth dimensional beings that exist in hyperspace.” Perhaps, Luke mused, DMT entities might be “quasi-autonomous structures of the nonlocal field.”<sup>23</sup> The word “nonlocal”



DMT entity

Pavel Souwiron

here seems indistinguishable from “non-spatial,” and seems like a modern version of Tyrrell’s ideas. The many-eyed monster motif, too, might be interpreted in terms of Tyrrell’s “idea-pattern.” But the agency behind these bizarre entity experiences remains unknown.

### Entities Everywhere: Widening the field of enquiry

There are broader issues at stake here because traditional apparitions and DMT entities represent the “tip of the iceberg” of the entity experience. For millennia, human beings have claimed to have contact with a wide range of non- or quasi-human beings. Despite thousands of accounts and volumes worth of speculation, we still know very little about the nature of these experiences.

Some researchers have attempted to bring this wide-ranging material together in comparative studies. In the early 1980s, the sociologist Hilary Evans published a study that compared entities in dreams, entities manifesting as hallucinations, doppelgängers and astral doubles, apparitions, religious visions, UFO related entities, entities as folklore, etc. He then came up with a broad theory based on “needs based experiences.”<sup>24</sup>

Such synthesizing exercises will naturally arouse debate. Despite commonalities, it seems unlikely that these diverse experiences can be fully understood by one, unifying theory. Even very similar apparition-type experiences might have quite different origins. In the *Journal of Scientific Exploration*, Stephen Braude cautioned that

different apparitional phenomena may require quite different sorts of explanations. In fact, even phenomenologically similar cases might demand different explanations, just as phenomenologically similar headaches might have different kinds of causes.<sup>25</sup>

Other “entity” experiences raise further problems of interpretation, casting more doubt on the idea that they can be understood in a unified way. Some, for example, would insist on the objective, literal reality of at least some “UFO-related” entities.<sup>26</sup> If correct, this would mean that classing them as hallucinations would be a mistake. Some “high-strangeness” cases do, however, seem obviously dreamlike, as in UK resident Jean Hingley’s January 1979 encounter with the “Mince-pie Martians”:

“... three ‘beings’ floated past me through the open door. They glowed with a brilliant light and

seemed to float a foot [30 cm] above the floor. As they floated past me into the lounge I saw that they had wonderful wings....

“There was a glow round their heads.... They were shaking and tugging at the little Christmas tree. There they were—three little slim ‘men’ in silvery-green tunics and silver waistcoats with silver buttons or press studs. They were about three feet six inches to four feet high [107—122 cm], all alike.”<sup>27</sup>

Later Jean and the “Martians” had a conversation. They said they came from the “sky” and knew about Jesus. They “sat on the couch and bounced like children.” Jean served them water in glasses, which vanished. She then fetched them a plate of mince-pies.

This case seems transparently absurd. Was Jean reporting a dream or fantasy? Certainly, there are indications that she was in an ASC; she felt as though she were “lifted up,” “in Heaven,” and seemed to “float” into the lounge. But the mystery of what really happened has died with her.

I’d conclude by advocating a genuinely open approach to these experiences. We should aim for a more comprehensive understanding of what is occurring in the person and perhaps beyond. The question of agency remains especially tricky.

An open approach means paying attention to likely mundane aspects of these cases, as well as attending to the places where conventional explanations seem to fall short. Any explanations would probably need psychological, neurological, and sociological depth. However, I’d agree with Tyrrell that at the very least, these various, baffling, and fantastic experiences do seem to throw a “searchlight into the workings of human personality.” The challenge is to understand what we see in that searchlight’s beam.



Harry Trumbore

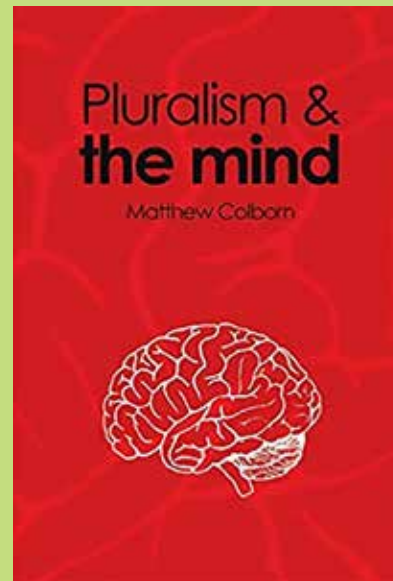


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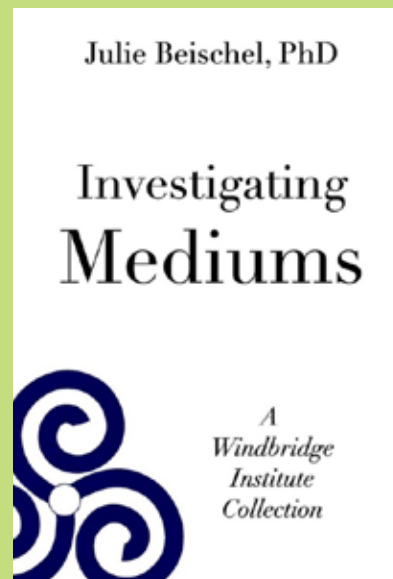
## ENDNOTES

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## Noteworthy Books



*Pluralism & the Mind*  
By Matthew Colborn  
Imprint Academic, 2011



*Investigating Mediums*  
By Julie Reischel, PhD  
A Windbridge Institute Collection, 2019

## ‘BACKSCATTER’

Jose Hernandez

# Home of the Heart



Where we have the opportunity to express our individuality