

# EdgeScience

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Current Research and Insights



**Being Donna Williams**

**Precognitions in Sports**

**Can Science Regain  
Credibility?**

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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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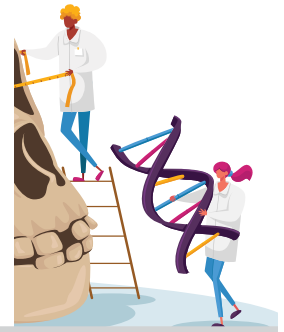
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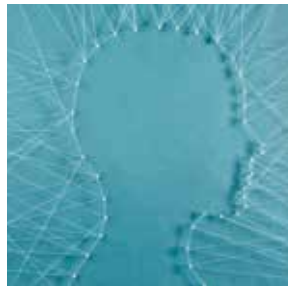
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Henry Bauer

# Can Science Regain Credibility?

Science has long been trusted as *the* reliable source of accurate knowledge and understanding. That was entrenched by such technical successes as the atom bomb of World War II. Government support for scientific research and training of scientists increased enormously with the establishment of the National Science Foundation and big increases in the budget of the National Institutes of Health. To this day there is considerable emphasis on expanding STEM education (Science, Technology, Engineering, Math).

In recent decades, however, qualms have been publicly expressed about the seemingly common *irreproducibility* of scientific findings; and there has been much publicly expressed disbelief about the benefits of such standard medical practices as the use of statins to lower cholesterol levels or vaccination against HPV. Many critiques of contemporary medicine and science have been published by informed observers as well as scientific researchers and practicing physicians;<sup>1</sup> there are claims, for example, that on a number of topics the mainstream “consensus” is flawed or downright wrong, not properly based on the available evidence.<sup>2</sup>

It is a commonplace to remark that science displaced religion as the authoritative source of knowledge and understanding, at least in Western civilization, during the last few centuries. One might then recall the history of religion in the West, and that corruption of its governing institutions eventually brought rebellion: the Protestant Reformation, the Enlightenment, and the enshrining of science and reason as society’s hegemonic authority. So it might seem natural to call now for a Scientific Reformation to repair the institutions of science that seem to have become dysfunctional.

## A Scientific Reformation

Suggested reforms include ensuring that empiricism and fact determine theory rather than the other way around;<sup>3</sup> more competent application of statistics; awareness of researcher biases as a way of decreasing their influence;<sup>1,3,4</sup> changes

in how academic institutions evaluate the worth of their researchers, and in how journals decide what to publish and what not to publish, and in how the provision of research resources is decided. But such suggestions fail to get to the heart of the matter. They call for individuals in certain

groups, as well as those groups and institutions as a whole, to behave differently than they have been behaving: researchers, editors, administrators, patrons; universities, foundations, government agencies, and commercial sponsors of research. Such calls for change are empty whistling in the wind if not based on an understanding of *why* those individuals and those groups have been behaving in evidently undesirable ways.

The Protestant Reformation was seeking the repair of a single, centrally governed, institution.

Contemporary science, however, comprises a whole collection of institutions and groups that interact with one another in ways that are not governed by any central authority.

That lack of integration or hierarchy of scientific activity is not generally understood. But perhaps the greatest source of misunderstanding comes about because scientific knowledge and understanding do not generate themselves or speak for themselves. So in common discourse, “science” refers to what people, as individuals or speaking for institutions, say or write about scientific knowledge and theories. Like all human beings, those who appear to speak for “science” are unavoidably fallible, subject to a variety of innate ambitions and biases as well as external influences. Psychological factors like confirmation bias get in the way of recognizing errors and gaps, and social factors such as Groupthink<sup>5</sup> pressure individuals not to deviate from the beliefs and actions of any group to which they belong.

## Scientific Consensus

So whenever a claim about scientific knowledge or understanding is made, the first reaction should be, “Who says so?”

It seems natural to presume that the researchers most closely related to a given topic would be the most qualified to

## In science we trust



explain and interpret it to others. But scientists are just as humanly fallible as others, so researchers on any given subject are biased towards thinking they understand it properly even though they may be quite wrong about it.

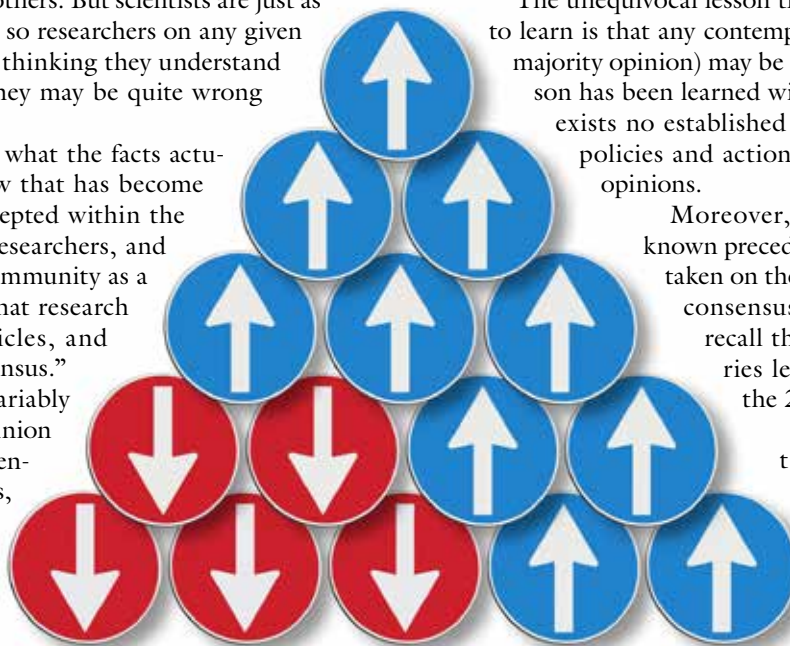
A better reflection of what the facts actually are would be the view that has become more or less generally accepted within the community of specialist researchers, and thereby in the scientific community as a whole; in other words, what research monographs, review articles, and textbooks say—the “consensus.”

However, almost invariably there are differences of opinion within the specialist and general scientific communities, particularly but not only about relatively new or recent studies. Unanimity is likely only over quite simple matters where the facts are entirely straightforward and readily confirmed.

But such simple and obvious cases are rare indeed. Instead of unanimity, the history of science is a narrative of perpetual disagreements as well as (mostly but not always) their eventual resolution. There are usually some contrarians, some mavericks among the experts and specialist researchers, some unorthodox views. Quite often, it turns out eventually that the consensus was flawed or even entirely wrong, and what earlier were minority views then become the majority consensus.<sup>6,7</sup>

That perfectly normal lack of unanimity, the common presence of dissenters from a “consensus” view, is very rarely noted in the popular media and remains hidden from the conventional wisdom of society as a whole—most unfortunately and dangerously because it is hidden also from the general run of politicians and policymakers. As a result, laws on all sorts of issues, and many officially approved practices in medicine, may come to be based on a mistaken scientific consensus.<sup>8</sup> As President Eisenhower pointed out,<sup>9</sup> public policies can become captive to a scientific-technological elite, those who constitute and uphold the majority consensus.

**“Whenever a claim about scientific knowledge or understanding is made, the first reaction should be, ‘Who says so?’”**



Francesco Scatena/iStock

The unequivocal lesson that modern societies have yet to learn is that any contemporary scientific consensus (= majority opinion) may be mistaken. Only once that lesson has been learned will it then be noted that there exists no established safeguard to prevent public policies and actions being based on erroneous opinions.

Moreover, there is no recent, widely known precedent of harmful public actions taken on the basis of a mistaken scientific consensus. Only specialist historians recall that misguided eugenics theories led to forced sterilizations in the 20th century.<sup>8</sup>

How then to bring home the need to fact-check a contemporary scientific consensus before basing public actions on it? Policymakers and the general public may not even be aware of the existence of competent, informed dis-

sent from a contemporary “consensus.” Even if they were, there is no overarching Science Authority, and no independent, impartial, unbiased, adjudicators or mediators or interpreters to guide policymakers in what the actual science might indicate as the best direction.

### Science Court

That’s why the time is ripe to consider establishing a Science Court.<sup>10</sup>

A Court is necessary because the majority consensus typically refuses to engage voluntarily and substantively with dissident contrarians, even in private. The Court would serve to force public engagement among the disagreeing technical experts. As the mainstream and the dissenters are made to present their arguments and their evidence *openly, publicly*, and to defend them under cross-examination, the points of disagreement would be identified and clarified.

On highly technical matters, outsiders cannot evaluate for themselves the separate claims made by a majority consensus in contrast to those made by competent maverick experts. But lay observers—the general public, the media, policymakers—can arrive at reasonably informed opinions about the relative credibility of opposing claims, no matter how abstruse the details, by noting how evasive or responsive or generally confidence-inspiring are the proponents of the majority and the minority opinions.

The credibility of “science” rests on the statements and actions of a whole host of separate groups and institutions, with no guarantee that their interactions will always result in the best understanding of the realities of the material world. Without a single overarching authority, there can be no accountability, and thereby no guarantee of credibility. An independent Science Court could provide society a trustworthy

forum in which diverse, disparate claims about matters of science could be held accountable by being forced to confront one another and justify themselves. Ideally, a Science Court could hear suits brought under the False Claims Act (or something like it); for example, quite apart from the huge human cost in lives and health, the HIV/AIDS blunder has cost and wasted tens of billions of dollars in national expenditures.<sup>11</sup>

How else than a Science Court might mainstream institutions be forced to give serious consideration to evidence against an accepted consensus?

Perhaps through something like a Scientific Ombudsman. When I had sought comment from the Centers for Disease Control & Prevention about the regularities in HIV demography that seem incompatible with a sexually transmitted infection, I was brushed off at some administrative level well below that of professional researchers. Had there been in place an Ombudsman, then at least someone at a professional level might have judged whether what I presented was worth discussing with an in-house biostatistician or epidemiologist.

At any rate, society as a whole, and policy-makers in particular, need the benefit of some mechanism by which minority views can be considered seriously before public actions of great consequence and cost are taken.

**Henry Bauer** is an emeritus professor of chemistry and science studies at Virginia Polytechnic Institute and State University. He was the Editor-in-Chief of the *Journal of Scientific Exploration* from 2000-2007. He is the author of numerous books on scientific unorthodoxies and the nature of the scientific enterprise, the latest of which is *Science Is Not What You Think: How It Has Changed, Why We Can't Trust It, How It Can Be Fixed* (McFarland, 2017). He also blogs at Skepticism about Science and Medicine, <https://scimedскеptic.wordpress.com>.



## ENDNOTES

1. Critiques of Contemporary Science and Academe; <https://tinyurl.com/syvds4n8>  
What's Wrong with Present-Day Medicine; <https://tinyurl.com/2ymhj2u>
2. Some examples are discussed in Henry H. Bauer, *Dogmatism in Science and Medicine: How Dominant Theories Monopolize Research and Stifle the Search for Truth*, McFarland, 2012
3. See especially, about theoretical physics, Sabine Hossenfelder, *Lost in Math: How Beauty Leads Physics Astray*, Basic Books, 2018
4. Stuart Ritchie, *Science Fictions: How Fraud, Bias, Negligence and Hype Undermine the Search for Truth*, Metropolitan Books (Henry Holt & Company), 2020
5. Irving L. Janis, *Victims of Groupthink*, Houghton Mifflin, 1972; updated in *Groupthink*, Cengage Learning, 1982
6. Bernard Barber, "Resistance by scientists to scientific discovery," *Science*, 134 (1961) 596–602
7. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, University of Chicago Press, 1970, 2nd (enlarged) ed. [1st ed. was 1962]
8. Tens of thousands of Americans were forcibly sterilized as recently as 1981 on the basis of expert consensus about the heritability of certain behavioral traits—Cera R. Lawrence, Oregon State Board of Eugenics, 3 May 2012; <https://hpsrepository.asu.edu/handle/10776/5663>
9. Dwight D. Eisenhower, Farewell speech, 17 January 1961; transcript at [http://avalon.law.yale.edu/20th\\_century/eisenhower001.asp](http://avalon.law.yale.edu/20th_century/eisenhower001.asp)
10. Chapter 12 in Henry H. Bauer, *Science Is Not What You Think: How It Has Changed, Why We Can't Trust It, How It Can Be Fixed*, McFarland, 2017
11. Henry H. Bauer, *The Origin, Persistence and Failings of HIV/AIDS Theory*, McFarland, 2007.

## RETRACTION NOTICE

### Experiences at the End of Life in Nursing Homes

By Alejandro Parra

*EdgeScience* 33, March 2018

We are retracting this article after it was brought to our attention that most of the article was plagiarized, having originally appeared in Sue Brayne, Hillary Lovelace, and Peter Fenwick, "End of Life Experiences and the Dying Process in a Gloucestershire Nursing Home as Reported by Nurses and Care Assistants," *American Journal of Palliative Care*, June-July 2008; and in Deborah O'Connor, *Palliative Care Nurses' Experiences of Paranormal Phenomena and Their Influence on Nursing Practice*, Australian Catholic University, 2002. The author acknowledges the "mistake" but largely blames his assistants and "cooperators." For other current retractions of this author's work, see, for example, "Retraction" in *Journal of Scientific Exploration*, 35(1), pp. 137–140. And Parra's book *The Last Farewell Embrace* has been withdrawn by Nova Science Publishers.



Michael Jawer

# Being Donna Williams: Instinctive Sensing as a Crucible for the Anomalous

The late Donna Williams (1963–2017) was a remarkable person. Raised in Australia, she was autistic but didn't know it until diagnosed at age 26. Up to that point she had been regarded as exceedingly strange. “Retarded,” “mental,” “stupid,” and “crazy” were some of the terms used, starting with her own family.



Chris Samuel/Wikipedia

Donna Williams

In many respects, Donna, the author of several landmark autism memoirs beginning with *Nobody Nowhere*, was encased in her own world. She had a fascination for shiny objects and the feel of different fabrics. She would see patterns and spaces, losing herself in what she gazed upon or felt herself a part of. She loved making collections of things and endlessly ordering them. She largely saw parts of people—hands, arms, faces—and didn't easily connect the whole person together, let alone her or his motivation. Similarly, the meaning carried by gesture and intonation was often lost, with the sounds of words alone having an impact.

Donna constantly dealt with a barrage of sensation, finding high-pitched sounds, bright lights, and even the most basic touch intolerable. It didn't help matters that her parents could be violent and abusive. Emotion scared her, and she coped by further withdrawing on the one hand and developing a pair of trusty personas on the other. She also, it turned out later, was allergic to various foods; her behavior and demeanor improved to some extent when this was addressed. Donna ultimately became able to feel her feelings rather than being scared by them and retreating into her private, inaccessible world.

## A Web of Sensory Impressions

In her memoirs, Williams struck several themes that are highly useful in understanding what it's like to be autistic. Her first key point is that people on the autism spectrum view themselves and the world primarily through a web of sensory impressions, not mental constructs.

People with autism spectrum disorder (ASD) are apt to experience things first and foremost as sensory phenomena, being drawn by the literal impressions themselves rather than by the person or thing in its totality. Whereas most people know a comb, for example, as an object that has utility with hair, and that happens to be flat and has teeth and is often black, for an autistic person that same comb might be fascinating for the scraping sound it makes when run across one's teeth. In the same way, individuals with autism perceive other people, animals, even insects based on characteristic colors, smells, vocalizations, and movements rather than taking them in as “wholistic” organisms.

A second, fundamentally related point is that people with autism will often merge into the web of sensation they are witnessing. They “resonate” with whatever is being experienced, losing their sense of body boundaries so that they seem to become one with the object. “Suddenly,” observes Williams in *Autism and Sensing*, “there is no you and what had been you just becomes a tool, like a sponge through which this sensing or resonance is taken in. What is sensed is not taken in by the conscious mind and there is no thought and no reflection, no wonder and no curiosity. There is just a journey into whatever is being sensed.”

## “Resonance” in Autism

A theory that has particular relevance here is known as the “intense world” hypothesis. It posits that people with autism

are bombarded at an early age with sensory stimuli and that they subsequently withdraw from the world in order to cope. The theory is the brainchild of Henry Markram, director of the Center for Neuroscience and Technology and codirector of the Brain Mind Institute at École Polytechnique Fédérale de Lausanne. Markram developed this theory with his wife, researcher Kamila Markram, and their former associate, Tania Rinaldi Barkat. It emerged out of years of frustration with the Markrams' son, Kai (who is now in his twenties).

The concept they hit upon is described most eloquently by Maia Szalavitz in her article "The Boy Whose Brain Could Unlock Autism" (*Matter*, Dec 11, 2013). In it she writes:

Consider what it might feel like to be a baby in a world of relentless and unpredictable sensation. An overwhelmed infant might, not surprisingly, attempt to escape. Kamila [Markram] compares it to being sleepless, jetlagged, and hung over, all at once. "If you don't sleep for a night or two, everything hurts. The lights hurt. The noises hurt. You withdraw," she says. Unlike adults, however, babies can't flee. All they can do is cry and rock, and, later, try to avoid touch, eye contact, and other powerful experiences. Autistic children might revel in patterns and predictability just to make sense of the chaos.

The intense world theory presumes that the world autistic people perceive is one of constant sensory overload. This is because their brains are hyperconnected. Rather than one cell having connections to ten other cells, it might be linked to twenty. So the world is experienced as "a barrage of chaotic, indecipherable input, a cacophony of raw, unfilterable data." It's worth noting that emotional stimuli are as prominent as physical stimuli in that barrage. Donna Williams called it "an intense, uncontrollable empathy." Around someone with a broken leg, for instance, she "felt their pain in my leg." The mechanism, as she describes it, is one where too much information is coming through and the person can either attend to the external stimuli or the internal stimuli but not both at the same time.

Williams did not just resonate with people and things—she resonated with places, too. "Sometimes," she writes in *Autism and Sensing*, "it is . . . possible to sense a lingering 'feel' to a place just as we might smell a lingering smell on the carpet from a beer-swilling party . . . or experience the lingering 'touch print' of a handshake that has already left a few seconds ago." In this respect, people with ASD may be highly sensitive persons, the appellation developed by psychologist Elaine Aron. As Aron puts it in her book *Highly Sensitive Child* (Broadway Books, 2002), "Most people walk into a room and perhaps notice the furniture, the people—that's about it. Highly sensitive persons can be instantly aware, whether they wish it to be or not, of the mood, the friendships and enmities, the freshness or staleness of the air, the personality of the one who arranged the flowers."

## We Could All Be Born Autistic

My proposition is this highly attuned sensing is the "default" setting of human beings, beginning in utero. Gradually, through infancy and childhood, this fluid and multimodal way of perceiving is superseded (in most people) as neuronal connections mature and sense perception becomes more discrete. The process may be akin to synesthesia, which, as science now surmises, results from extraordinarily dense and far-flung neuronal connections. Just as it's possible that we're all born synesthetes, it is equally possible that we're all born autistic.



Pogonici/istock

Some people, because of a combination of nature and nurture, retain this mode of perceiving to a far greater extent than others. The types of individuals I mean are those who are fantasy-prone, or who find themselves easily absorbed into various situations or pursuits, or who are suggestible or who have thin boundaries. For them, it takes little or no effort to slip into a reverie, to empathize intensively, to "merge" into something or someone else. It's easy for them to conjure up a memory with such clarity and vividness that the recollected situation seems to be taking place all over again. Williams considers this form of perception to be "a very pure state," preconscious and independent of directed thought or judgment.

Lest you think that such traits are childish and have no application in the real world, I would suggest otherwise. The ability to perceive broadly and empathize deeply is well suited to any creative endeavor, whether writing or any form of art or science. It is a decided advantage in counseling and psychological studies, not to mention in criminal investigations where the character and tendencies of those involved are of critical importance. Many people on the public stage also undoubtedly possess these talents. One is Meryl Streep, the acclaimed actress. In an interview, she acknowledged being highly sensitive and having thin boundaries. "I have my antenna out, what can I say?" she explained in an interview for *The Week* ("Why Streep Plays it Safe," Aug. 13, 2004). "That's my job as an actor. I'm hyper-alert to all signals. My boundaries are not so clear. I sort of bleed out into whoever I'm talking to."

### Gathering Others by Their Edges

Williams, who became an adept author and sculptor, said that she got to know people, places, and things by what she called their “edges.” By this she meant the degree of congruence between her essence and the essence of any “other” based on feeling. To my mind, edges correlate with thin and thick boundaries. As propounded by the late psychiatrist Ernest Hartmann, boundaries reflect the characteristic way individuals process stimuli. People with thick boundaries come across as stolid or rigid; people with thin boundaries come across as reactive or vulnerable. Boundaries are essential to life because, without them, organisms would literally merge into one another or into their surroundings. One has to be able to differentiate self from other. Our immune systems operate on just this principle.

Williams suggests—and I agree, based on abundant available evidence—that people with thin boundaries are more likely than others to have anomalous experiences. This is not because they have some sort of arcane psychic powers but because they literally take in more information at a preconscious level.

### Blindsight and Everything We Miss

Here is a remarkable example of how much there is to perceive—and how many of us typically filter it out. The experiment (you may have heard of it) involves a video of two teams passing around a basketball. One team is dressed in white shirts and the other in black shirts. Viewers are asked to count how many times the white team passes the ball. Most people count correctly but, in so doing, miss a strange development: In the middle of the video someone dressed in a gorilla suit walks into the game, pauses to look right at the camera, beats its chest, and then walks away. The tendency to miss the gorilla is known as inattention blindness. A few people, when this video is played, do see the gorilla immediately. They are the ones, I would wager, who are thin-boundary—who are primed, neurobiologically, to notice environmental details that pass others by.

Another even more startling experiment was conducted at Rice University by Tony Ro and colleagues and reported in the *Proceedings of the National Academy of Sciences* in 2004. The subjects agreed to be temporarily blinded through magnetic pulses that affected their visual cortex. During this momentary blindness they stood before a computer screen on which flashed either a vertical or horizontal line. In an accompanying test, a red or green ball appeared on the screen. When the subjects were asked what they had seen, all reported they’d seen nothing—and, of course, they should not have been able to. When asked to guess which way the line was oriented, however, they were correct 75 percent of the time. And they were right 81 percent of the time on the color of the ball. By chance, both those figures should have been roughly 50 percent. While some volunteers said they’d been guessing randomly, others reported “having a feeling” about what was on the screen. Their higher confidence tended to correspond with a more accurate guess.

Visually, this phenomenon (both with the Rice University experiment and the gorilla experiment) is known as blindsight. It’s well studied by now, with the eye/brain connection receiving serious scrutiny. But what of our other senses? And what of emotion itself? Is it possible that some of us are more thoroughly “wired” to gather sensory and felt impressions based on information, as in the computer screen experiment, that shouldn’t, by all rights, be accessible?

### The Personal Agency of the “Will”

We would do well to ponder what combinations of factors produce exceptionally sensitive people—whether it’s people with autism, people with synesthesia, savants, gifted children and child prodigies, children who vividly recall what appear to be memories of another life, or people who seem to engender anomalies themselves. A strong case can be made that such personalities are the outcome of something gone amiss during development: an infection, accident, or other stressor that occurs during gestation, a trauma suffered in childhood...in effect, an intrusion or shock to the system. However, there’s another way of looking at how people with extraordinary





sensitivities develop. It's counterintuitive but is explored by Williams in her conception of "will."

By will, she means personal agency, a sense of self somehow independent of the body. Her will, she explains in *Autism and Sensing*, was the vehicle for her "shadow sense" to engage—the means by which she claims to have been able, at a very early age, to sense "the surface, texture and density of material without looking at it with physical eyes or touching it with physical hands or tasting it with a physical tongue or tapping it to hear its sound. It was as though some part of me, of my 'be-ing' could see without my eyes, hear without my ears, touch without my hands, and feel...without my body making direct physical contact." Her will was the agency through which young Donna would lose herself in her surroundings.

### The Roots of Dissociation

It's well established that magical thinking, belief in the paranormal, and anomalous perceptions are all conditioned by trauma, particularly chronic childhood abuse, which Williams endured. Fantasy and imagination—as much as she denied it—clearly serve as an attempted "escape route" from recurring abusive treatment. The illusion that the child holds some special, invisible capacity to influence people or events is reassuring, and from the comfort of this fancy flows a willingness to believe in strange powers generally. Over time, the child may grow into an adult who is not only interested in things psychic, but believes that he/she actually experiences them.

Now, though, consider a different twist. Just as the tendency to dissociate is undoubtedly provoked by trauma, it could just as easily—and even earlier in one's life—be occasioned by an innate sensitivity to one's environment. Just as a child can have no control over the unpredictable or abusive treatment inflicted on her or him, an infant can have no control over an inborn sensitivity to bright lights, loud noises, intrusive smells, or harsh, tactile sensations. Dissociation could eventually become a personality trait through the simple urge to take refuge from such environmental influences.

A seminal 1949 study by Paul Bergman and Sibylle K. Escalona ("Unusual Sensitivities in Very Young Children" in *The Psychoanalytic Study of the Child* 3) provides evidence for this. Children from three months to seven years of age were observed rhythmically rocking themselves or covering their eyes and ears from unwelcome stimuli: odors, sounds, colors, textures, temperatures. Their feelings also appeared to be easily hurt, so that (as the investigators commented), "They were 'sensitive' in both meanings of the word: easily hurt, and easily stimulated...Variations in sensory impression that made no difference to the average child made a great deal of difference to these children."

It's conceivable, then, that dissociation is a natural outcome of high sensitivity, whether or not trauma is inflicted later on. Absorption and fantasy proneness (the tendencies, respectively, to become swallowed up in an experience and for mental and emotional journeys to be experienced as real as reality) could be similar, expected outgrowths.

### A Wellspring for Anomalous Perceptions

I want to propose something rather provocative now. Namely, that the environmental and emotional sensitivities that are a hallmark of so many extraordinary people—as well as the dissociation and absorption that inevitably occur—are the crucible from which anomalous perception can genuinely result. I am certainly not the first to propose this. In *The Omega Project*, Kenneth Ring, who has researched near-death experiences, suggested that "sensitives with low stress thresholds"...through "their difficult and in some cases even tormented childhoods... have come to develop an extended range of human perception."

This is not to preclude much more prosaic and undoubtedly more common factors such as suggestibility, magical thinking, preexisting paranormal belief, anxiety, discomfort with ambiguity, mental illness (such as schizoid personality disorder), and simply mistaken environmental cues. But it suggests that beyond such factors, highly sensitive and thin-boundary people can legitimately apprehend stimuli in the external environment unnoticed by the rest of us who are more, shall we say, neurotypical.

### The Centrality of Emotion

I return to the overarching theme of my longtime research into personality and personality differences: namely, the centrality of emotion in the formation and expression of self. Emotion is elemental to our existence. It allows us to recognize other people's states of mind and, just as often, signals to us the degree of satisfaction with our own situations and lives. The expression of emotion cements bonds between people—far more than does the transmission of thoughts and ideas. Emotion plays a pivotal role in our preconscious, as it flows and manifests in associations, imagery, and dreams. Ultimately, feelings are essential to judgments of self-worth and the meaning of our lives.

The people most sensitive to emotional energy are those whom the rest of us find the most difficult to understand. But, I submit, they have access to a gateway to greater understanding of our embodied existence and the universe we are born into.

Excerpted with permission from *Sensitive Soul: The Unseen Role of Emotion in Extraordinary States* by Michael A. Jawer, Park Street Press (InnerTraditions.com), 2020.

**MICHAEL A. JAWER** is a Washington, DC-based writer, speaker and researcher. His expertise is the nexus of personality development, body/mind, emotion, and spirituality. Along with *Sensitive Soul*, he is the author of two previous books, *The Spiritual Anatomy of Emotion* and *Your Emotional Type* (both co-authored with Dr. Marc Micozzi). More information may be found at [michaeljawer.com](http://michaeljawer.com).



John Pates

# Precognitions in Elite Sports: The Role of Intuition

**A**s an applied sports psychologist, I spend most of my time gathering knowledge from phenomenological semi-structured interviews with coaches and athletes. Over the years I have talked to scores of elite athletes. During the interview process, I will always ask the following phenomenological question; “Tell me about the best performance in your sport.” Their response is usually a vivid recall of an important, significant event. However, when asked to elaborate and describe their subjective experiences during the event, there is often a delay in responding or a complete and utter blank.

Athletes struggle with this question because during peak performances they often enter an altered state of mind the psychologist Mihaly Csikszentmihalyi called flow.<sup>1</sup> During flow, the athlete becomes so absorbed by the moment and task at hand that they lose their awareness of self. In this state of mind, the brain is not in its usual wakeful condition because it has entered the realm of the unconscious. In this altered state of mind, athletes perceive their “will” to be in control of their performance. In other words, they perceive what they want to happen does happen. This creates feelings of confidence and happiness and being in control. Time distortions such as *tachypsychia* often emerge from the experience. The athletes in a flow state may also experience spiritual transcendence and the loss of self-consciousness.

The strange happenings of the flow state experience can be explained using theories allied with quantum physics. Time distortions, for example, can be explained by the fact that time in the quantum world of the unconscious mind is non-linear.<sup>2</sup> Additionally, the loss of self-consciousness can be explained by the absence of awareness and the failure of quantum collapse. When this takes place, the unconscious mind becomes operational.<sup>3</sup> In the absence of conscious awareness, the athlete relies upon his/her instincts and intuition.

## Reports from Elite Athletes

Intuition is key to understanding optimal performance in sport. Reports from elite athletes support this supposition. Researchers Michael Murphy and Rhea A. White cite numerous cases where athletes rely on intuition to achieve excellence in sport.<sup>4</sup> For example, the St. Louis Cardinals baseball player Lou Brock who broke the “all-time” stolen-base record in 1977 was cited as a player who emphasized intuition rather than physical qualities as the reason he was so good at stealing bases. In another example, Cleveland Brown fullback Jim Brown reported he “had a sixth sense that told him how the defense would react.” When hockey great Wayne Gretzky was asked for the secret to his success, he replied, “I don’t know; I just go to where the puck is

Gretsky: Kris Krüg, Batistuta: Roberto Vicario, Brock: Johnmaxmena2, Brown: LBJ Foundation



Wayne Gretzky



Gabriel Batistuta



Lou Brock



Jim Brown

going to be.”<sup>5</sup> After the 2019 NBA finals Kawhi Leonard was interviewed by Issah Thomas about the strategies he used in the game. He replied: “You have to stay in the moment. When you start thinking too much, you don’t play well. It’s about reaching and reading and using my instinct to play basketball. I feel that’s how you get into the zone. That’s how you can hit ten shots in a row or your team does.”<sup>6</sup>

Additionally, in a private conversation with soccer player Gabriel Batistuta, Argentina’s all-time leading goal scorer told me: “When coaches give me instructions on how to play, I cannot score goals because the information they provide me stops me from reacting quickly enough to get rid of the defenders. I score goals when I use memories of how I play as a child. As a child I would not think about strategies or tactics, I would just run into spaces based on my intuition and gut feelings. I just knew exactly where I should run when I followed my feelings, I would then score for fun because I would always find myself a step ahead of the defenders.”

Based upon anecdotal evidence, it is reasonable to assume the intellect of an athlete can be understood by appreciating its dependence upon the intuitional wisdom of the inner self. Unfortunately, empirical data supporting this proposition is absent from the sport psychology literature. Intuition’s close association with psi phenomena and paranormal experiences have meant intuition has been overlooked by sport psychology as a construct of interest. I aimed to address this problem by examining the intuitive abilities (precognitions) of professional golfers and professional football players.

### A Study of Golfers and Football Players

In a project that included athletes from the European Ryder Cup team and athletes from a professional football team, I examined the subjective experience of precognitions (the ability to sense the future) purported by four elite golfers and four elite football players. An open-ended, semi-structured phenomenological interview<sup>7</sup> was used to gain a description of their experiences.<sup>8</sup> Thematic analysis of transcripts describing their experiences resulted in the identification of five major themes associated with intuition in this context. These were “clutch

situations,” “emotionally arousing stimuli,” “pre-feeling,” “self-talk,” and “prospective imagery.”<sup>9</sup>

The findings of this study suggest precognitions transpire when elite golfers have to make a putt or a shot, or an elite football player has to score a goal or make a tackle, in an emotionally arousing situation, such as when the consequences of failure are high. In other words, precognitions occur when a golfer or football player is exposed to a clutch situation similar to those described by Darren Hibbs of Nova Southeastern University, Fort Lauderdale.<sup>10</sup> Self-talk also appeared to be coupled with the precognition effect. In this study, self-talk appears to help the athlete’s “psych” themselves up, control arousal, direct effort, and focus their attention on the task in hand. In other words, self-talk has both a motivational and instructional function.<sup>11</sup> The presence of self-talk during precognition experiences suggests attention, intention, and emotions appear to be important mediators of the precognition effect. Experiments reported by Institute of Noetic Sciences parapsychologist Dean Radin<sup>12</sup> and Cornell University social psychologist Darryl Bem<sup>13</sup> also support this view.

The athletes also reported a positive prospective image (future-orientated image). Specifically, the golfers reported they had an image of the ball going into the hole and a pre-feeling of something improbable was about to happen. The football players reported an image of scoring a goal, making a tackle, and a pre-feeling that was described as strange and unique. Both prospective imagery and pre-feelings (gut feelings) were involuntary, suggesting these automatic thoughts are emerging from the unconscious mind.

“Pre-feelings” are strongly linked to our anticipatory systems of motor control.<sup>14</sup> Anticipation is one of the principal characteristics of human performance.<sup>15</sup> Indeed, the ability to anticipate a future event separates the good athletes from the elite. In basketball, for example, anticipation in the form of a pre-feeling is needed to predict when it is the right time to “reach and jump” to block the opponent’s shot. Anticipation in the form of a pre-feelings also allows basketball athletes to hit and catch objects moving faster than they can see. The inference is that athletes need a pre-feeling to predict “what will happen next” to know “what to do next.”



## “Are pre-feelings (gut feelings) anticipatory responses that originate from our memory, or do they involve genuine influences from the future?”

### The Origin of Pre-Feelings

More research is required to understand where pre-feelings come from. Are pre-feelings anticipatory responses that originate from our memory, or do they involve genuine influences from the future? The possibility that pre-feelings derive from information that comes from the future appears to many as absurd. However, discoveries in quantum physics and human consciousness suggest this proposition may be possible.<sup>16</sup> Indeed, we now know that the world is not simply a deterministic mechanism; foundational equations of quantum physics not only support the common-sense notion that time flows forwards, but it also highlights the possibility that time may also go backward. In other words, in quantum theory, the future and the past may affect the present, and information from the past, present, and future coexist.<sup>17</sup> Erwin Schrödinger's non-linear equation supports this proposition. “People like us, who believe in physics, know that the distinction between past, present, and future is only a stubbornly persistent illusion,” he wrote in 1955.<sup>18</sup>

I believe expert athletes receive information from the future because they shut down the conscious mind and utilize the unconscious/quantum mind to process information. The act of shutting-down conscious processing gives athletes access to what Carl Jung called the collective unconscious, which is a storehouse of absolute knowledge.

According to Jung, the collective unconscious is dominated by non-linear temporality. The lack of non-linear time means knowledge from the past, present, and future coexist and can be accessed simultaneously. I suggest that during optimal performance athletes enter a trance-like state known as flow and at some stage of the flow state, the athlete has temporary access to absolute knowledge that emerges from the mind as it interacts with the collective unconscious. This produces a situation where the limits of time and space are transcended. In this realm, information can materialize from the past, present, or the future, enabling athletes to initiate creative acts and respond to sensory information with superfast thinking. This enables athletes to think faster, adapt faster, and be in the right place at the right time. For support of this proposition let's go

back to Wayne Gretsky's statement: “I just go to where the puck is going to be.” Gretsky knows where the puck is going to be because he is receiving information about the future.

The overall findings of my studies are interesting because they support the idea that precognitions are real events and that elite athletes may unconsciously respond to information beyond the reach of their normal senses.

The results of my findings also suggest that intuition requires greater attention and investigation from the sports psychology community. It is my sincere wish that this study will inspire other researchers to investigate the role of intuition in sport.

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### ENDNOTES

- 1 Csikszentmihalyi, M. (1975). *Beyond Boredom and Anxiety*. San Francisco, CA: Jossey-Bass.
- 2 Pandarakalam, J.P. (2018). “Certain bio-cognitive and quantum views of depression,” *American Journal of Psychiatry and Neuroscience*. 2, 33–45. <https://doi.org/10.11648/j.ajpn.20180602.12>.
- 3 Ibid.
- 4 Murphy, M., & White, R.A. (1978). *The Psychic Side of Sports*. Reading, MA: Addison-Wesley Publications.
- 5 Berliner, D.C. (1994). “The wonder of exemplary performance.” In J. N. Mongieri & C. C. Black (Eds.), *Creating Powerful Thinking in Parents and Students*, Fort Worth, TX: Holt Brace, p. 167.
- 6 Kawhi Leonard interviewed by Issah Thomas, June 14, 2019.
- 7 Kvale, S. (1983). “The qualitative research interview: A phenomenological and a hermeneutical mode of understanding,” *Journal of Phenomenological Psychology*. 14, 171–196.
- 8 Braun, V., & Clarke, V. (2006). “Using thematic analysis in psychology.” *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>.

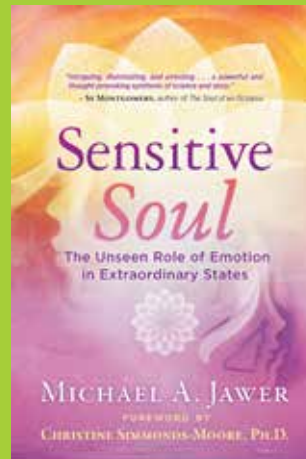
- 9 Pates, J., & Kingston, K. (2020). "I Got a Feeling: Exploring Precognitions in Elite Golfers," *Journal of Athletic Enhancement*, 9(1). [https://doi.org/10.37532/jae.2020.9\(1\).324](https://doi.org/10.37532/jae.2020.9(1).324); Pope and Pates, in review.
- 10 Hibbs, D. (2010). "A conceptual analysis of clutch performances in competitive sports." *Journal of the Philosophy of Sport*, 37, 47–59.
- 11 Hardy, J., Hall, C. R., & Hardy, L. (2004). "A note on athletes' use of self-talk," *Journal of Applied Sport Psychology*, 16, 251–257; Van Raalte, J. L., Vincent, A., & Brewer, B. W. (2016). "Self-talk: Review and sport-specific model," *Psychology of Sport and Exercise*, 22, 139–148. <https://doi.org/10.1016/j.psychsport.2015.08.004>.
- 12 Radin, D. (2011). "Predicting the unpredictable: 75 years of experimental evidence," Paper presented at Quantum Retrocausation: Theory and Experiment. AIP Conference, San Diego, California, USA. doi: 10.1063/1.3663725.
- 13 Bem, D. J. (2011). "Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect," *Journal of Personality and Social Psychology*, 100, 407–425.
- 14 Radin, D., & Borgos, N. (2009). "Intuition Through Time: What Does the Seer See?" *Explore: The Journal of Science and Healing*, 5(4), 200–211. <https://doi.org/10.1016/j.explore.2009.04.002>.
- 15 Aglioti, S., P. Cesari, M. Romani, and C. Urgesi. (2008). "Action Anticipation and Motor Resonance in Elite Basketball Players," *Nature Neuroscience*, 11, 1109–1116.
- 16 Meijer, K.F., & Geesink, J.H. (2017). "Consciousness in the Universe is scale invariant and implies an event horizon of the human brain," *Neuro Quantology*, 15, 41–79. <https://doi.org/10.14704/nq.2017.15.3.1079>; Penrose, R & Hameroff, S. (2011). "Consciousness in the Universe: Neuroscience, Quantum Space-Time Geometry and Orch OR Theory," *Journal of Cosmology*, 14; Smythies, J. (2009). "Brain and Consciousness: The ghost in the Machines," *Journal of Scientific Exploration*, 23, 37–50.
- 17 Shoup, R., (2011). "Understanding Retrocausality: Can a message be sent to the past?" In *Quantum Retrocausation: Theory and Experiment*, D. P. Sheehan Ed., AIP Conference. <https://doi.org/10.1080/21640599.2012.701373>.
- 18 "Before his death, Einstein said that the distinction between past, present and future, is merely an illusion. Can you offer a solid explanation of the meaning of this statement?" *Quora*, January 6, 2021.

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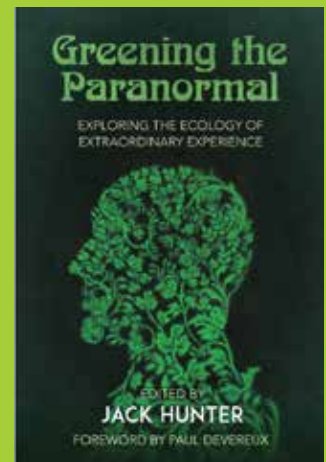
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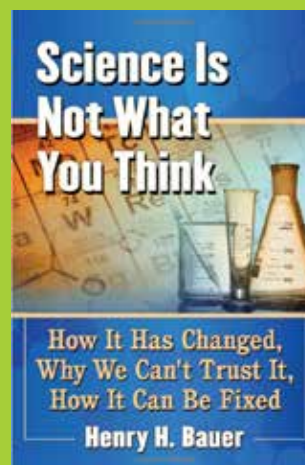
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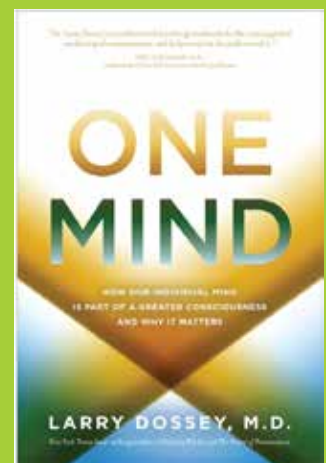
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Park Street Press, 2020



**Greening the Paranormal: Exploring the Ecology of Extraordinary Experience**  
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August Night Press, 2019



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**One Mind: How Our Individual Mind Is Part of a Greater Consciousness and Why It Matters**  
By Larry Dossey, M.D.  
Hay House, 2013

Larry Dossey

# Quote, Unquote In Others' Words

I grew up amid the farm-and-ranch culture in Central Texas in the 1940s, where higher education was not greatly valued, was infrequently achieved, and was often regarded with suspicion. In my orbit, the only book quoted was the Bible.

When my twin brother and I graduated from our microscopic high school as the top two students in our class of 40 kids, we qualified for full scholarships at the University of Texas at Austin. This was a wrenching, life-changing transition for both of us. At “The University” we encountered the dazzling world of empirical science. This resulted initially in a near-worshipful attitude toward this thoroughly materialistic domain. This uncritical response would change drastically in the following years.

I had an earlier, pre-university experience that was also pivotal. In my mid-teens I encountered a little book of Ralph Waldo Emerson’s essays. This cheap paperback was displayed in the local drugstore on a revolving wire rack of mostly westerns and detective novels. I have no idea how Emerson wound up on this rack (a term with interesting connotations), but I’m sure he would have approved. Emerson ripped open a veil onto a landscape I never knew existed. This included concepts such as transcendence, the Over-soul, unitary consciousness, radical views of creativity, and other ideas I later learned were tabooed in respectable science. Thus at the University I was confused as to how Emerson’s ideas could be reconciled with a modern, scientific worldview, with which they spectacularly collided. With a foot in both worlds, I struggled to sort it all out. In the process I became an insatiable quotation collector. I still can’t kick the habit, nor do I want to.

As a collector of quotations, I am often asked, “Why do you collect what others have said? Don’t you have any firm opinions of your own? Why don’t you just tell us what you think?” These are valid objections. It is indeed possible to go through life hiding behind the views of others. I have four responses.

*First:* tradition. During the years of my training in medical science and clinical medicine I learned that, while one’s personal opinions on a particular issue are always important, they may not be sufficient. If possible they should be buttressed by references to the opinions of scholars in the field and the work that has already been done. That’s why published studies in medicine are usually fortified by scores and sometimes hundreds of references to earlier work in a particular area, under the heading of a “review of the literature.” I discovered early on that additional opinions can be a strength, not a weakness, when added to one’s own views. The more complex and difficult a particular issue, the more helpful the opinions of others can be.

This perspective extends to every area in science. Even Sir Isaac Newton acknowledged in 1675 that if he had “seen further” it was “by standing on the shoulders of giants.” In Umberto Eco’s novel *The Name of the Rose*, William of Baskerville echoes Newton: “We are dwarfs, but dwarfs who stand on the shoulders of those giants, and small though we are, we sometimes manage to see farther on the horizon than they.”

*Second:* my record. I have openly shared my thoughts and opinions in a dozen books and hundreds of lectures, essays and editorials published in peer-reviewed medical journals over the years.

*Third:* Life is short. As the great American cultural historian Frederick Turner acknowledges in his acclaimed book *Beyond Geography*, “Half a lifetime might be required before I could master enough information on the various constituent fields to ‘justify’ the sense I already had of the phenomenon.” Turner quotes cultural historian Johan Huizinga: “In treating of the general problem of culture, one is constantly obliged to undertake predatory incursions into provinces not sufficiently explored by the raider himself. To fill in all the gaps in my knowledge beforehand was out of the question for me, I had to write now or not at all. And I wanted to write.” So do I—gaps and all, some of which can at least be partially bridged by the opinions of others.

*Fourth and most important:* I believe there is overwhelming evidence that consciousness is shared, collective, unitary, and unconfined to specific points in space and time, including individuals. At some deep level, thoughts fundamentally belong to everyone. As physicist David Bohm said, “The deeper you go, the more general the thoughts are to where they belong to the whole species.” This is not a rogue view. Erwin Schrödinger, Nobel laureate in physics in 1933, agreed, saying, “The overall number of minds is just one.... In truth there is only one mind.” And Stephan A. Schwartz, the contemporary American archaeologist, explorer, writer, and polymath notes, “It is this part of us, always present, but little acknowledged, that produces the breakthroughs of genius, the epiphanies of spiritual awareness, and the ecstasies of religion. It is an aspect of our being that exists beyond time and space, and is known by many names; in the scientific world it is referred to as the nonlocal self.”

If this is so, we have no certain way of assigning originality and the point of origin of any idea. We borrow thoughts from one another and pass ideas around, usually unconsciously.

So here’s my alibi: We will quote others, consciously or not. In fact, when I quote someone, in some sense I may be quoting you. Thank you!



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“Like Emerson, he [John Muir] urged on those who would be truly men of thought the importance of keeping commonplace books, and of committing to their pages aphorisms and epigrams snatched from the circumstances of daily life. These entries, he said, should resemble the honeybee: ‘short, sweet, and with a sting at the end’....”

—Frederick Turner,  
*John Muir: Rediscovering America*

## On “Wildnisgeist: Poltergeists of the Woods?” by Joshua Cutchin, *EdgeScience* 43



John Shepherd/iStock

I enjoyed Joshua Cutchin’s article detailing connections between poltergeists and Bigfoot. In my 2020 book *Blithe Spirits: An Imaginative History of the Poltergeist*, I compare the poltergeist to the Trickster-figure from world mythology, and have a chapter, “The Haunted Mask,” which tries to show how classic legendary Trickster-figures like the Norse Loki, the Greek Hermes, Proteus, and others are often arch shape-shifters—as is the poltergeist, who sometimes seems to adopt the guise of a spirit of the dead, sometimes of a fairy, sometimes of RSPK, sometimes of a demon . . . and sometimes, as Cutchin points out, of a Bigfoot-like entity. Interestingly, many Trickster-figures, like the Native American Indian Wakdjunkaga, or Coyote, are often depicted in tales as being hairy, part-animal, part-human creatures, not unlike Bigfoot; the basic idea is to depict a human-like intelligence trapped within an animal-like body, a metaphor for the primitive consciousness of early man, maybe.

But poltergeists themselves have also been known to adopt similar forms. Cutchin mentions both the Battersea Poltergeist and Gef the talking Mongoose; it is interesting to note that, when asked what it looked like, the Battersea polt once replied “POLT. BIG CLAWS, HANDS AND FEET—MEN’S BODY,” whilst Gef’s front paws were more like human hands, having opposable thumbs and human-like fingers. Such human-like hands allow the Trickster-poltergeist, like the ordinary monkey or ape, to perform human-like tasks such as using basic tools or producing simple artefacts; Bigfoot, too, acts similarly when leaving behind woven structures of grass and leaves. So, it would appear that Tricksters, poltergeists, and Bigfoot alike blur the boundaries between the human and the animal, but by manifesting in similar ways, they also blur the boundaries between one another, too. Cutchin sensibly concludes that “the exact intersection . . . between them may never be revealed.” I would tend to agree; in the philosophy of Charles Fort, the precise demarcation points between various initially disparate-seeming classes of phenomena are in the end

rather ambiguous and in the eye of the beholder. It could well be the same with Cutchin's proposed Wildnisgeists; whether they are more spirit or animal is, I suspect, a question that will never be answered. Whenever a Trickster like Proteus is about to be caught or identified, he simply slips his net and alters the shape of his mask.

For instance, in British folklore, as I show in my 2016 book *The Hidden Folk: Are Poltergeists and Fairies Just the Same Thing?*, something very similar to a Wildnisgeist was once known of, called a "Boggart," a sort of hairy "wild man of the woods," which turned into a malevolent poltergeist when invading a household and dirtying the place up. However, if treated well, the hairy Boggart could become a helpful Brownie instead, a fairy-poltergeist which would do the housework for you. Similar-sounding entities are known of from throughout world folklore, such as the furry, oven-dwelling Russian *domovoi*.

Are these all different classes of entity, or the same entity seen under different aspects of itself? As obvious shape-shifters, I think the best question to ask about paranormal entities of all kinds is whether such protean qualities lie inherent within the spooks, or within the shifting perceptual frameworks of their observers. In the pre-Middle Ages, it may not have seemed as eccentric for woodfolk to believe in hairy fairies like Boggarts. In more modern times, such beliefs would seem more unconventional, so these same things appear to have been reconceptualized as Bigfoot, a more plausible-sounding physical biological cryptid to most modern ears in a materialism-governed age from which fairies have now been banished. In seeking to remake Bigfoot as the Wildnisgeist, perhaps Cutchin is just bringing the wheel around full circle again?

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## On "The Mysterious Death of Joe Fisher" by Louis Proud, *EdgeScience* 43

Does anyone know whether Joe Fisher was on SSRI antidepressants? When David Healy, professor of psychiatry and author of *Let Them Eat Prozac* (Toronto: James Lorimer, 2003), gave Zoloft to 19 healthy volunteers, two of them had suicidal ideation. One woman "found herself thinking of the beam in the ceiling of her bedroom, planning to hang herself from it . . . and didn't care that finding her body the next day would



Douglas Williams/Riddle Films

disturb the rest of the family" (p. 272) and the other "was in fact on her way out the door to kill herself when the phone rang" (p. 271). Healy has said that "it had become clear to [him] that the Prozac drug group could trigger suicide and violence" (p. 12). I'm wondering whether that was a factor in this case.

Imants Barušs  
Department of Psychology  
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### Malcom Fisher (Joe Fisher's brother) replies:

Yes, I very much believe that taking anti-depressants were certainly a contributing factor to Joe's death and here's why. From what I remember Joe went to a local doctor in Fergus seeking something to help him with a chronic inability to sleep (not to alleviate depression).

The doctor apparently reached into his drawer and handed Joe some antidepressants called Celaxa (which apparently also have a sleep-inducing side effect). I think Joe only started taking the drugs maybe a couple of weeks before his untimely death.

Drug notes say that "The possibility of a suicide attempt is inherent with this drug therefore patients should be closely supervised and consideration given to hospitalization." Because, in this case, the drug wasn't even properly prescribed, there was no such supervision at all.

As the author Louis Proud points out, there were a number of other significant factors that conspired to make life difficult (and maybe untenable) for Joe, and he describes them well. But to me, taking the Celaxa would certainly have contributed to a weakened mental state.

### David Kendall (best friends with Joe Fisher) replies:

I look at Joe's picture (2 ft. by 3 ft.) every day as I sit at my desk penning "ecological thrillers." He's at the bow end of a canoe, holding aloft a walleye. As you know, I think, he and I along with Jac Holland (*Sun* photographer) and writer Ronald Wright would go canoeing/camping for a week every year until Joe's death. He was my best friend (other than my wife Grecia). I am the sceptic in terms of the theory that evil spiritual entities drove Joe to take his life. The antidepressants? Yeah, they likely abetted his suicidal despair. The real cause for his decision, in my view, was that despair. Basically, I believe he was, despite that feckless smile, full of self-contempt for his failure in love relationships and economically. He was—as I can attest as his co-executor along with Malcom—bankrupt. On top of that, he had endured almost a year of pain. He finally got a back operation, a spinal fusion, three months before he jumped. The surgery, he told me, stopped the pain the moment he woke up. But he had waited in line so long; he told me that while writing his final, unfinished, book he could sit for ten minutes, then stand for ten minutes, then lie down for ten minutes—day, after week, after month of steady pain. So maybe, after the relief of surgery came something like post-partum depression. I think, in sum, that life had lost its attraction for Joe.

Jack Hunter

## What About Traditional Ecological Knowledge? Further Thoughts on “Are Plants Sentient?”

I was delighted to see Krissy Eliot’s article on plant sentience in *EdgeScience* 44. It is a thorough and balanced overview of the scientific controversy over whether plants should be attributed consciousness, intelligence, and personhood, or whether it is all a matter of wishful thinking and human projection. The research that is currently taking place in the burgeoning fields of plant learning, plant communication, and plant neurobiology is at the very cutting edge of the Western scientific enterprise, and is demonstrating that, at the very least, plants have a lot more going on than the standard view of them has permitted us to imagine. The implications for human behavior of this ever-expanding body of research—if taken seriously—could be staggering for Western societies currently facing ecological crises on an unprecedented scale.

I have been thinking increasingly about the issue of plant intelligence—as well as other forms of non-human consciousness that might constitute ecosystems—over the past few years. My own journey into this territory began when I started work with a permaculture education project in 2016, which introduced me to the study of natural principles and processes.<sup>1</sup> In conversations with permaculture practitioners—permaculture is a design system rooted in observations of the natural world—I noticed that they would occasionally talk about their observations of natural systems in almost *animistic* terms—they might say things like “the willow chose me,” for example, as if some sort of communication had taken place between them and the plants they worked with.<sup>1</sup> I also noticed that a crucial factor in establishing this kind of animistic perspective was a process of active observation and interaction with natural systems—the first of permaculture’s twelve principles. This resonated with elements of my own PhD research on trance and physical mediumship in Bristol, where I had argued that the emergence of spirit personalities—another form of non-human consciousness—in seances requires a similarly detailed and active process of observation and interaction.<sup>2</sup>



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This line of inquiry was continued in 2019 with the publication of *Greening the Paranormal: Exploring the Ecology of Extraordinary Experience*,<sup>3</sup> which is a collection of essays examining the relationship between ecology and anomalistics from a variety of different perspectives, and an attempt to map out this area of intersecting research trajectories. Finally, over the last couple of years I have been developing—and am now teaching—the MA in Ecology and Spirituality through the Sophia Centre, University of Wales Trinity Saint David.<sup>4</sup> This has given me the opportunity to think more deeply about many of the issues raised in these preliminary excursions with my colleagues and students in the Sophia Centre. With this recent work in mind, then, what follows are some of the thoughts and considerations that Eliot’s excellent article provoked in me.

Although Eliot’s discussion was principally focused on the debates that are currently taking place in the field of scientific plant biology, there was only a brief mention of traditional ecological knowledge (TEK) in her survey of the literature on plant sentience. TEK is a term that has been growing in popularity since the 1980s and which emerged from anthropological research on the relationships of indigenous communities to their surrounding ecologies. Social ecologist Fikret Berkes explains that systems of traditional ecological knowledge represent the cumulation of “experience acquired over thousands of years of direct human contact with the environment,”<sup>5</sup> which includes “an intimate and detailed knowledge of plants, animals, and natural phenomena, the development and use of appropriate technologies for hunting, fishing, trapping, agriculture, and forestry,” and so on.<sup>6</sup> Moreover, it is argued that systems of traditional ecological knowledge represent a form of “holistic knowledge, or “world view” which parallels the scientific discipline of ecology.<sup>7</sup> Indeed, biologist Robin Wall Kimmerer has argued that traditional ecological knowledge and scientific ecological knowledge (SEK) have many points of overlap and might be complementary, explaining that the synergy of perspectives can be useful in a variety of different ways:

Traditional ecological knowledge can be a source of new biological insights and potential models for conservation biology and sustainable development . . . Examination of traditional ecological knowledge explicitly brings multicultural perspectives into the core of the science curriculum, where they have generally been absent . . . Recognition of traditional ecological knowledge increases opportunities for productive partnerships between Western scientists and indigenous people . . . Traditional ecological



knowledge integrates scientific and cultural concerns in a holistic manner...<sup>8</sup>

But as already pointed out, systems of TEK are often embedded in wider holistic worldviews from which they cannot be separated. For many indigenous societies this worldview entails an understanding that the world is fundamentally alive in a sense that is not recognized by mainstream materialist science. As an illustration of this key difference between TEK and SEK Kimmerer gives the example of the Anishinaabe word *Puhpooewee*, which is defined as “the force which causes mushrooms to push up from the earth over night.”<sup>9</sup> She goes on to add that “[t]he makers of this word understood a world of being, full of unseen energies that animate everything...”<sup>10</sup> This use of language to understand the world in terms of animacy is echoed in the ethnographer Alfred Irving Hallowell’s famous commentary on Ojibwa grammar, which treats all manner of objects that Western languages and science view as inert as alive. He wrote:

Since stones are grammatically animate, I once asked an old man: Are all the stones we see about us here alive? He reflected for a long while and then replied, ‘No! But some are.’... The Ojibwa do not perceive stones in general as animate any more than we do. The crucial test is experience...<sup>11</sup>

From the perspective of traditional ecological knowledge, then, it would come as little surprise to find that plants might possess consciousness and intelligence—in fact it might be expected, or at least accommodated within a broader framework of understanding that the category of personhood extends beyond the human. It is interesting to note, however, that while Western scientific ecology and conservation are keen to draw on systems of TEK for certain kinds of information—species classifications, population dynamics, habitat knowledge, animal behavior patterns, and so on—the animate and personal understanding of the world is often dismissed in favor of the standard mechanistic and materialistic perspective, which denies that rocks can be persons. Linda Tuhiwai Smith, a professor of indigenous education at the University of Waikato in Hamilton, New Zealand, explains that:

The arguments of different indigenous peoples based on spiritual relationships to the universe, to the landscape, to stones, rocks, insects, and other things, seen and unseen, have been difficult arguments for Western systems of knowledge to deal with or accept...<sup>12</sup>

Broadly speaking, biology and ecology are positivistic sciences, in the sense that they rely on empirical and quantitative research methods that align them with other so-called “hard science” disciplines in the academy. There is little room in “mainstream” ecological science for what might be termed the “spiritual”—biology and ecology generally (though not exclusively) adopt a materialist metaphysics.<sup>13</sup> Systems of traditional ecological knowledge, by contrast, are fully embedded



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in relational modes of understanding the world that see establishing good relationships between persons—human and non-human—as foundational. In the words of Graham Harvey, Professor of Religious Studies at the Open University, UK, “[a]nimism... is more accurately understood as being concerned with learning how to be a good person in respectful relationships with other persons.”<sup>14</sup> As Kimmerer explains, in order to live sustainably from an indigenous perspective, it is necessary to live in good relationships with the other-than-human persons that make up the ecosystems that sustain them:

In such cultures, people have a responsibility not only to be grateful for the gifts provided by Mother Earth, they are also responsible for playing a positive and active role in the well-being of the land. They are called not to be passive consumers, but to sustain the land that sustains them.<sup>15</sup>

Indigenous cultures, then, foster an *active* relationship with ecology, and understand that participation and interaction—through everyday activities as well as ritual and ceremony—are key to establishing good relationships with the non-human world. TEK, then, encourages our participation in the world, while SEK encourages academic detachment from it. From this perspective Western science’s difficulty in coming to terms with the possibility of plant consciousness might arise from deeper cultural frameworks that deny animacy in the world. By fostering a closer relationship with ecology—framed in the language of animism—indigenous cultures encourage a personal relationship with the world, and so they experience it. It is also interesting to note, however, that participation itself—even without a pre-existing animist framework—seems to give rise to a sense of personal relationship with the natural world. The work of M.I.V. Botelho, Federal University of Viçosa, Brazil, and colleagues<sup>16</sup> would seem to support this suggestion. In their study of the introduction of agroforestry techniques—a farming system that combines approaches from agriculture and forestry to promote biodiversity while also generating large crop yields—in rural Brazil they found that:

...farmers have begun to conduct intense observations of the environment in relation to plants, animals, water, and soil and to shape and renew the use of traditional knowledge in their production methods. Furthermore, because the farmers now verbalize

their reflections and exchange their observations and knowledge with others, they are internalizing the idea that a profound change is occurring in their conceptions of nature. This process is similar to the process that deep ecologists describe as a metaphysical reconfiguration of the self and the ecosystem...<sup>17</sup>

This kind of interactive, participatory approach to the non-human world may go some way to explaining why evolutionary ecologist Monica Gagliano's ritualized encounters with trees,<sup>18</sup> recounted at the beginning of Eliot's article, reveal such a profound sense of plant consciousness, while the scientific laboratory-based research only provides piece-meal snapshots of its true complexity (whatever that might ultimately be like). (This is also reminiscent of the observation that extraordinary experiences as they occur in the drama and flux of the real world are far more profound than the psi effects documented in laboratory conditions, which are often only just statistically significant.) The implication is that it is that act of *participating* in the complexity of the real world that gives rise to extraordinary experiences of relationship to nature.

To return to Eliot's question at the start of her article—is plant consciousness scientific fact or the product of human imagination?—as is often the case, the answer is not clear-cut or straightforward in either direction. Objective science is beginning to reveal what scientists conceive as the building blocks of consciousness and intelligence—the ability to sense the environment, to learn, remember, communicate, and adapt to change, for example—but interaction and participation bring these disparate components together into a complex whole that can be experienced and dialogued with. Culture and the imagination, then, both provide frameworks for interaction with the world, and consequently affect our relationship with it. What is clear is that if we do want to understand non-human consciousness we will have to participate with it in order to establish a relationship with it. Traditional ecological knowledge—with its emphasis on human embeddedness in ecosystems—in combination with scientific ecological knowledge, may offer fruitful avenues for investigating the sentience of plants and other elements of the living world through a holistic and non-reductive lens.

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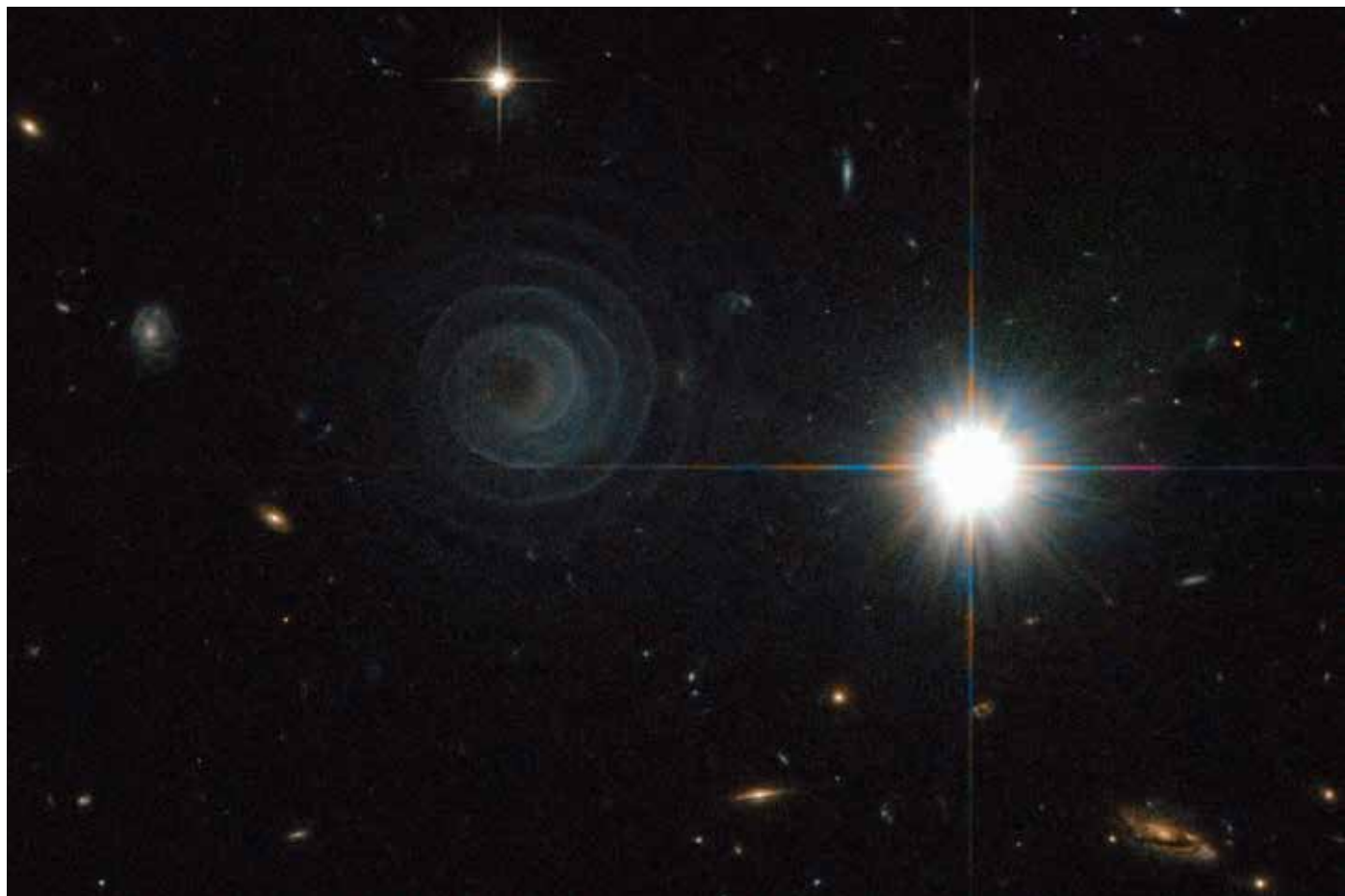


## ENDNOTES

- 1 Hunter, J. (2018). "Preliminary Report on Extraordinary Experience in Permaculture: Collapsing the Natural/Supernatural Divide." *Journal of Exceptional Experiences and Psychology*, Vol. 6, No. 1, pp. 12–22.
- 2 Hunter, J. (2020). *Manifesting Spirits: An Anthropological Study of Mediumship and the Paranormal*. London: Aeon Books.
- 3 Hunter, J. (ed) (2019). *Greening the Paranormal: Exploring the Ecology of Extraordinary Experience*. Milton Keynes: August Night Press.
- 4 Ecology and Spirituality (MA), <https://www.uwtsd.ac.uk/ma-ecology-spirituality/>
- 5 Berkes, F. (1993). "Traditional Ecological Knowledge in Perspective." In J.T. Inglis (ed.) *Traditional Ecological Knowledge: Concepts and Cases*. Ottawa: International Program on Traditional Ecological Knowledge. (pp. 1–10).
- 6 Bourque, J., Inglis, J.T. & LeBlanc, P. (1993). "Preface." In J.T. Inglis (ed.) *Traditional Ecological Knowledge: Concepts and Cases*. Ottawa: International Program on Traditional Ecological Knowledge. (pp. vi–vii).
- 7 Ibid.
- 8 Kimmerer, R.W. (2002). "Weaving Traditional Ecological Knowledge into Biological Education: A Call to Action." *BioScience*, Vol. 52, No. 5, pp. 432–435.
- 9 Kimmerer, R.W. (2013). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Minneapolis: Milkweed, p. 49.
- 10 Ibid.
- 11 Hallowell, A.I. (1960). "Ojibwa Ontology, Behavior and World View." In G. Harvey (ed) (2002) *Readings in Indigenous Religions*. London: Continuum. p. 21
- 12 Tuhiwai Smith, L. (2012). *Decolonizing Methodologies: Research and Indigenous Peoples*. London: Zed Books. p. 78.
- 13 Simberloff, D. (1980). "A Succession of Paradigms in Ecology: Essentialism to Materialism and Probabilism." *Synthese*, Vol. 43, No. 1, pp. 3–39.
- 14 Harvey, G. (2005). *Animism: Respecting the Living World*. London: Hurst & Company. p. xi.
- 15 Kimmerer, R.W. (2011). "Restoration and Reciprocity: The Contributions of Traditional Ecological Knowledge." In D. Egan, E.E. Hjerpe & J. Abrams (eds) (2011). *Human Dimensions of Ecological Restoration: Integrating Science, Nature and Culture*. Washington, DC: Island Press, p. 257.
- 16 Botelho, M.I.V. & Cardoso, I.M. & Otsuki, K. (2016). "'I made a pact with God, with nature, and with myself': exploring deep agroecology." *Agroecology and Sustainable Food Systems*, Vol. 40, No. 2, pp. 116–131.
- 17 Ibid.
- 18 Gagliano, M. (2018). *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants*. Berkeley: North Atlantic Books.

Chris Savia

## What Caused the Extraordinary Spiral in LL Pegasi?



ESA/NASA &amp; R. Sahai

**A**fter more than 30 years in Earth's orbit, NASA's Hubble Space Telescope continues to astonish stargazers with unique cosmic wonders. While reviewing recent Hubble data from the direction of the northern constellation of Pegasus, near the star LL Pegasi, Mark Morris of UCLA and his colleagues stumbled upon an unusual spiral emission pattern coming from an extreme carbon star designated as AFGL 3068.

Spirals are common in the universe, manifesting themselves as galaxies, hurricanes, and flowers, and in mathematics like the Fibonacci series and the golden ratio. What's striking about this phenomenon is how the spiral arms are regularly spaced around AFGL 3068; it's the first of its kind to be observed by humanity.

Their curiosity piqued by this stellar spiral, Mark Morris and company set about teasing out its secrets. Despite the star being obscured by a cloud of cosmic dust, they peered through the haze via the infrared spectrum to confirm the source of this phenomenon is a binary pair. One of the stars is entering its planetary nebula phase, the same fate for our own sun in a few billion years, generating the volume of material that is being thrown outwards from the pair at speeds upwards of 50,000 km an hour. Coupled with measurements of the regular spacing

between the spirals, astronomers determined the stars orbit each other every 800 years.

Yet one mystery persists—what is the source of the illumination for the spiral arms? Does the light come from the pair, or is it reflected from neighboring stars? And what might the night sky look like to observers who may dwell within that system?

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### REFERENCE

Mark Morris, Raghvendra Sahai, Keith Matthews, Judy Cheng, Jessica Lu, Mark Claussen and Carmen Sánchez-Contreras, "A Binary-Induced Pinwheel Outflow from the Extreme Carbon Star, AFGL 3068," in M. J. Barlow & R. H. Méndez, eds., *Planetary Nebulae in our Galaxy and Beyond*. IAU S234, United Kingdom: Cambridge University Press, 2006.