

Attempts to Validate Paranormality

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ABSTRACT

Mother Nature always had many mysteries in her lap. Humans being inquisitive looked to these mysteries and tried to find out what caused them. Till the time the causal roots were found the mysteries remained as Paranormal. With the advancement of science, many paranormal phenomena got explored and have turned into normal. But still, we have many unexplained mysteries and researchers are trying to turn them into normal through research. This paper aims to understand current Paranormal phenomena, what validation attempts have been done, and what is the way forward to completely understand them scientifically and turn them into Normal phenomena.

Keywords: *Paranormal, Mysteries of Nature, Unexplained mysteries, psychic phenomena, UFO, UAP, Bermuda Triangle, Crop Circles. Parapsychological Research, Aliens*

A few years ago, I wrote a paper¹ “Paranormality—Myth or Reality”, in which I tried to analyze Paranormality limited to psychic phenomenon. I investigate the psychic paranormal phenomena through logic by giving due weight to the views of proponents and opponents of the phenomenon. The views of Skeptics were analyzed who brushed aside Paranormal Events as utter nonsense and gave arguments against them being real and asserted that these were nothing but hallucinations. The proponent gave strong arguments for defending the bizarre happenings and proving them as real factual occurrences.

We have now come a long way and extensive research has taken place not only to prove them as real but also a beginning is made to look into their causal roots for both psychic paranormal and other paranormal phenomena.

Nature has a treasure of unexplained phenomena which get termed as Paranormal. Humans because of their inherent curiosity, attempt to understand the mysteries of nature. Paranormal turns into normal as science expands its horizons to explain these bizarre happenings.

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Attempts to Validate Paranormality

Today through this paper, I shall explore Paranormality and its validation attempts. I shall accomplish it step by step by first explaining what is Paranormal, giving its definition, shall explore its components in detail followed by validation research into various components giving current status and a way forward for future research so that existing paranormal gets completely explained and get consideration as normal events.

First thing first, let us understand what is meant by Paranormality:

What is Paranormal?

In our day-to-day life, we are sometimes baffled by the occurrence of events beyond the scope of scientific understanding. Witnessing these events, we wonder “How could these happen?”.

Many a time, you remember a long-lost friend and, in a few seconds, your mobile rings and he is online. You had lost contact with your friend for many years, and this happens! You simply blurt out “How could this happen?”.

I wish to recall some events from my life which baffled me when they happened. I narrate these from my book²:

As for me, there have been some occasions where I was baffled. I remember on February 23, 2018, at 3 p.m. when my father died, I came out from ICU. I was astonished to see my mother sitting in the area where ICU patients' relatives were sitting. I was baffled because my mother had passed away 36 years ago. I drew the attention of my brother who also gasped at the sight. We kept on gazing at her for a few seconds till our sisters climbed the stairs and came to ICU and then we found that she had disappeared and instead, there was some other old lady sitting there. We had gasped at this incident relating to the visitation of a dead person to the world and we wondered, "Had she come to escort our father--- Was it a visitation of a dead person, signifying that there is ***life after death!!***

The incidence has no scientific causal explanation but it did happen. Since it defies scientific existing laws, it could be termed a Paranormal incident.

I recall another incident when I was working outstation and used to commute by train to reach my place of work. One evening after office hours, I was sitting on a bench at the railway platform waiting for the train to come and I slipped into a short nap -I saw that I had reached the station of my hometown and had come out and picked up my scooter from the scooter stand and started for my house. On reaching the society where I lived, I was unable to enter the society gate as the gate was blocked. Having this short dream, I woke up and the train came and I boarded it and forgot the dream. Having got off at the station when I reached my society, I could not enter the society gate as there were many people gathered in the society, and the gate was blocked by their presence. I had to park my scooter outside the gate and had to walk through the mob which had gathered

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there because death had occurred in the society. I, then, remembered my dream and gasped at this manifestation of **Precognition** i.e., learning about a future incident. This defies scientific understanding and, hence, is a **Paranormal** incident.

When I was a child, my maternal uncle used to tell us about an incident when our mother was a small girl around six years old. When pestered by pranks by him and other friends, she used to say that if she is troubled like this, she will go away to her house where she has a big family with two sons and their wives who love and respect her. Even though this was not verified but we used to wonder whether that was a case of **Reincarnation**!!

The above were incidents that happened to me and then I as an experiencer, could understand the meaning of paranormal.

The literature is full of such bizarre baffling paranormal incidents which are beyond the scope of scientific understanding. I put forth some of these incidents extracted from the same book²:

Dean Radin (2006) in his book, "Entangled Minds" (pp21,22) gives an incident in the life of Mr. Hans Berger who gave the world "EEG":

One morning, while a young boy, Hans was on horseback during a training exercise, his horse suddenly reared. Hans was tossed into the air and he landed hard on the road, directly in the path of a fast-approaching, horse-drawn cannon. He realized with horror that he was about to be crushed, but the driver of the cannon managed to stop the horses in time. The accident left Hans thoroughly shaken but without serious injury.

At the same very moment, many miles away in his family's home, his older sister was suddenly overwhelmed with an ominous certainty that something bad had happened to Hans. She anxiously insisted that her father sent him a telegram. Hans on receiving the telegram, knew that his feelings of intense fear had somehow reached his sister.

*Many years later, Hans wrote, "This is a case of spontaneous **telepathy** in which at a time of mortal danger, I transmitted my thoughts and my sister, who was particularly close to me, acted as the receiver".*

Telepathy, a connection between two minds is not possible as per current laws of science and hence it is a **Paranormal** event.

In the same book, Dean Radin talks about the Precognition of the worst terrorist 9/11 attack on World Trade Centre Towers in the USA on September 11, 2001, where the twin towers were brought to dust by the crashing of an aeroplane into the building by the terrorists, killing many

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people. More than 14000 cases of precognition of the event were reported and collected at Rhine Research Centre. One such case is given below:

On September 10, 2001 midnight, Dr MacGregor was on a flight and managed to occupy vacant seats and tried to sleep as it was a long flight. In his own words, " ... I emptied my mind of all thoughts, focused my attention on the muted roar of engines, and lay very still—more awake than ever.

In the evening it was almost imperceptible, the strange feeling that started to come over me. It began with an awareness of how absolutely still my body was. I wondered vaguely why it was so perfectly motionless and felt a strong urge to move it. The more I tried to move, however, the more I detected a kind of resistance. Something hard and unyielding surrounded my body, immobilizing it. Yes, I felt it clearly now, I was encased and held fast in concrete.....

The feeling of being imprisoned in concrete intensified—with it now was a sense of dread. I could not turn my head or move my arms or legs or expand my lungs with a deep breath of air. I was hopelessly trapped and on the verge of claustrophobic terror. And then the pain began. The concrete was moving. From all sides it was pressing on me, tighter and tighter, squeezing me with unbearable force. My body was about to be crushed. There was nothing to hold on to, nowhere to run to. In another moment my life would be over.....

It was a long trip from Seattle to the island where we lived. We arrived home at 6 am on September 11.

Three thousand miles away, the World Trade Tower Centre was bursting into flames after being hit by aeroplanes. Thousands of lives ended that morning in the crush of concrete!!!!!!.....

It is simply baffling to observe how could a person learn about an event which is going to happen. This profound precognition event is beyond the scope of scientific understanding and is a **Paranormal** event.

Joseph Murphy narrates another queer and interesting incident:

A widow visited me last year, saying that her husband, shortly before his demise, had told her that he had made out a new will leaving all of his estates to her. But his lawyer knew nothing about it and he had a will made ten years back. She had searched everywhere but could not find the new will.

I suggested to her that she claimed, 'Infinite intelligence knows where the will is and reveals to me.'

She started praying and after three or four days of praying, she distinctly heard her husband's voice in the kitchen where she was ironing: 'Look up the 45th chapter of Isaiah.' She did and there she found the new will, attested by two witnesses, all in legal phraseology, dated and signed.

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The *after-death communication* (ADC) from a dead person is beyond belief and it suggests that there may be *life after death*. The possibility of life after death is beyond the scope of scientific understanding and hence such an event is *a Paranormal* event.

Abraham Lincoln, some have said, was a clairvoyant who accurately predicted his death. Whether this is true or just a coincidence is debated; however, the facts seem to tell a very interesting story.

Just days before Lincoln was shot, he told his wife of a dream that he had:

“He was woken up by the sound of crying and went into the East Room of the White House, where a casket was laid open. There was a throng of mourners as well as several men guarding the casket. When he asked who was in the casket, one of the soldiers told him that it was the President, who had been killed by an assassin.”

Three days after telling his wife this dream, Lincoln was shot and killed by John Wilkes Booth. (<https://biography.yourdictionary.com/abraham.lincoln>)

This is another profound incident, this time of *Clairvoyant Premonition*, a phenomenon beyond scientific understanding.

We have discussed several incidents that defy logic and their perception cannot be explained by our known five senses; hence, these are beyond scientific understanding. These are not normal events; hence, these are called Paranormal events.

Apart from these events, Ufology, Astrology, Bermuda Triangle Phenomenon, Crop Circles Phenomenon, Reiki, Color therapy, Near Death Experiences (NDEs), and Out of Body Experiences (OBEs) are some events which are beyond the understanding of scientific explanation. Nostradamus prophesies are also beyond scientific understanding. All these are Paranormal events and, now, we can say that paranormality encompasses all phenomena that are beyond scientific explanation.

I hope we are amply clear about what paranormal may mean. Let us look at its precise definition:

Paranormal Definition

English Dictionary defines Paranormal as follows:

Paranormal is a general term that designates *experiences that lie outside "the range of normal experience or scientific explanation" or that indicates phenomena understood to be outside of science's current ability to explain or measure*. Paranormal phenomena are distinct from certain hypothetical entities, such as dark matter and dark energy, only in so far as paranormal phenomena are inconsistent with the world as already understood through empirical observation coupled with scientific methodology. Thousands of stories relating to paranormal phenomena are found in popular culture, folklore, and the recollections of individual subjects. In contrast, the scientific community, as referenced in statements made by organizations such as the United States National

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Science Foundation, maintains that scientific evidence does not support a variety of beliefs that have been characterized as paranormal. Source (<https://educalingo.com/en/dic-en/paranormality>)

Some more definitions:

Vocabulary.com defines it as below:

The adjective *paranormal* means to talk about things that are outside of normal experience, like ESP, ghosts, and UFOs. You might describe your friend's uncanny ability to bend spoons with her mind as *paranormal*, or beyond a scientific explanation. While many people don't believe in any kind of paranormal events, some see or hear things they can't explain rationally. The Greek word *para*, "against, or contrary to," is paired up with *normal*: if it goes against what's normal, you can probably describe it as *paranormal*.

(Source: <https://www.vocabulary.com/dictionary/paranormal>)

Britannica Dictionary definition of Paranormal:

Very strange and not able to be explained by what scientists know about nature and the world

(Source: <https://www.britannica.com/dictionary/paranormal>)

The Cambridge Dictionary says:

Paranormal---impossible to explain by known natural forces or by science:

paranormal powers/events/forces

This book is about people who claim to have paranormal abilities such as ESP and mind reading.

(Source: <https://dictionary.cambridge.org/dictionary/english/paranormal>)

Thus, we see that almost all dictionaries *define it as events or experiences that are beyond the understanding of science because the current laws of science cannot explain such phenomena.*

Wikipedia has to add more meaning to Paranormal:

Paranormal events are purported phenomena described in popular culture, folk, and other non-scientific bodies of knowledge, whose existence within these contexts is described as being beyond the scope of normal scientific understanding. Notable paranormal beliefs include those that pertain to extrasensory perception (for example, telepathy), spiritualism and pseudosciences of ghost hunting, cryptozoology, and ufology. Source (<https://en.wikipedia.org/wiki/Paranormal>)

Classification of Paranormal events

The paranormal events are anecdotal and defy scientific explanations. The anecdotes could be psychic or non-psychic and hence, Paranormal Phenomena could be broadly classified into two groups-

- Psychic Paranormal Phenomenon and
- Non-Psychic Paranormal Phenomenon.

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Psychic means those happenings that appear to contradict physical laws and suggest the possibility of causation by mental processes. The word psychic carries in itself the aspect of inexplicability by science and calls for the involvement of mental processes.

But the Non-Psychic Paranormal phenomena would be the bizarre phenomena unexplainable by science which occur in nature but do not involve mental processes. In the Paranormal context, we shall consider those phenomena as non-psychic which cannot be explained by current laws of science and are not involving mental processes.

Let us explore these phenomena:

Psychic Paranormal Phenomena

The psychic phenomena involve the mind; be it mind-to-mind connection (Telepathy), seeing through Mind's eye (Clairvoyance), or Mind reaching out to capture the future (Precognition), or Mind influencing Matter (Psychokinesis). Survival issues (life after death) also come under psychic Paranormal because it is held that the body dies but Mind /Soul remain immortal. Survival issue covers Life after death/ Survival aspects-After death communications, manifestations of ghosts, Poltergeist activities, communications with spirits, reincarnation, and Near-Death experiences.

All the above involve mental aspects and all these phenomena defy scientific understanding. Out of them, the phenomena involving perceptual ability get grouped under Extra-Sensory Perception (ESP) because the perception happens without using the known five sensory organs-Eyes (seeing), Ears (hearing), Nose (Smelling), Tongue (Tasting) and Skin (Feeling). The term Extra-Sensory signifies that normal senses are not used in perceiving the happenings. So broadly we have 3 classifications of Psychic Paranormal Phenomena:

- ESP (Extra-Sensory Perception)
- Psychokinesis (Mind influencing matter) and
- Survival Issues (Life after death, After death communications, manifestations of ghosts, Poltergeist activities, communications with spirits, reincarnation, and Near-Death experiences)

We shall discuss each of these in detail later in the paper; let us first learn what is meant by Non-Psychic Paranormal Phenomena:

Non-Psychic Paranormal Phenomena

Mother Nature has many secrets in its folds and humans being curious are continuously trying to unfold the mysteries of nature and learn the secrets. Till the time science advances and find the causal roots, such mysteries remain Paranormal. The startling mysteries (excepting psychic phenomena) defying scientific understanding come under the category of Non-Psychic Paranormal Phenomena.

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Take the case of Lightning. To the primitive man, it was an act of God which came under the category of Non-Psychic Paranormal Phenomena. As science advanced, scientists explained that Lightning was a giant spark of electricity in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acted as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, this insulating capacity of the air broke down and a rapid discharge of electricity that we know as lightning took place. The flash of lightning temporarily equalized the charged regions in the atmosphere until the opposite charges built up again. Lightning can occur between opposite charges within the thunderstorm cloud (intra-cloud lightning) or between opposite charges in the cloud and on the ground (cloud-to-ground lightning).

(Source: <https://www.nssl.noaa.gov/education/svrwx101/lightning/#:~:text=In%20the%20early%20stages%20of,that%20we%20know%20as%20lightning.>)

With the advancement of science, lightning has, no longer remained a mystery and the *paranormal has turned into normal*.

The same is the case with rainbows in the skies. We are still fascinated to see beautiful colours painted in the form of an arc in the sky. This phenomenon was paranormal till science advanced and scientists found out that when sunlight hits a rain droplet, some of the light is reflected. The electromagnetic spectrum is made of light with many different wavelengths, and each is reflected at a different angle. Thus, the spectrum is separated, producing a rainbow. (Source: <https://education.nationalgeographic.org/resource/rainbow/>).

Thunderstorms, the then Paranormal phenomenon during primitive times, turned into a normal phenomenon when scientists discovered that these formed when warm, moist air rises into cold air, the warm becomes cooler which causes moisture, called water vapour, to form small water droplets—a process called condensation. The cooled air drops lower in the atmosphere, warms and rises again. This circuit of rising and falling air is called a convection cell. If this happens with a small amount of air and moisture, cloud forms but if the amount of air and moisture is large, a *thunderstorm* manifests.

(Source: <https://scied.ucar.edu/learning-zone/storms/thunderstorms#:~:text=Thunderstorms%20form%20when%20warm%2C%20moist,%2C%20warms%2C%20and%20rises%20again.>)

Thunder, Lightning, and Rainbows which fascinated primitive man as magical paranormal happenings were considered the acts of God till Science advanced and found the causes behind each of these. What conditions in the environment led to their manifestation and once the causal facts were known, these paranormal became routine normal happenings- details of which were known to one and all across the world?

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The above gave account of ancient paranormal that got turned into normal, there have been some recent phenomena around the world whose mystery was solved when their causal roots were found. It is interesting to cite those phenomena here:

Recent Paranormal phenomena turned into Normal Phenomena

Rolling Stones (USA)



(Figure 1--- Trails of Rolling Stones found at Death Valley National Park (California), and at Little Bonnie Claire Playa (Nevada). <http://blog.universalyarn.com/2018/01/26/free-pattern-friday-sailing-stone-shawl/>.)

Who knew there was another meaning to the world rolling stones, and that too a literal one? Rolling stones or sailing stones or moving stones is a geological phenomenon where rocks move along a smooth valley without any animal or human force. They also leave long trails as they move.

How does this happen? The movement of the rocks, as heavy as 300 kg, is a result of large ice sheets breaking in a winter pond due to the heat caused on sunny days. The thin floating ice, otherwise frozen on cold winter nights when melted is driven by the wind at a speed of 5 mpm (meter per minute). Resulting in the rocks to move and leave a trail. Rocks with smooth surfaces leave a drifting trail (with turns) while rocks with rough surface leave straight trails.

Frozen Bubbles (Canada)

Spectacular yet a dangerous sight, frozen bubbles can be seen in winters at Abraham Lake in Alberta, Canada. The phenomenon occurs when methane gas gets trapped underwater, freeze, and

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form otherworldly visuals. Such a large amount of methane trapped is highly inflammable. So even a lit match nearby can cause a giant explosion. In addition, the large amount of gas signifies how much warmer we are making our planet. The bubbles burst naturally at the onset of spring.

Blood Falls (Antartica)

As the name suggests, Blood Falls is a waterfall which shoots blood-red water into a river. It was first seen in the year 1911 in Eastern part of Antarctica – in the McMurdo Dry Valley. The sight is a perfect backdrop for a horror film: creepy, mysterious and of course bloody. Previously, it was believed that red algae were causing the water to change its colour and turn blood-red. Though this hypothesis was never proved.

The mystery of Blood Falls was longstanding and was finally solved in 2017. Thanks to research conducted by the University of Alaska Fairbanks, the true origin of the so-called blood was revealed to be "oxidized iron in brine saltwater," as reported by Forbes. This is the same procedure which caused iron to turn red due to rusting.

This creepy yet fascinating phenomenon can be seen from a **helicopter or cruise ship in the Ross Sea.**



Figure 2: (The falls with red water is seen at Eastern part of Antarctica – in the McMurdo Dry Valley <https://www.forbes.com/sites/trevornace/2017/04/28/mystery-of-antarcticas-blood-falls-is-finally-solved/>.)

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Light Pillars (USA, Canada, Arctic)



(Figure 3: Light pillars seen in US and Canada

<https://www.forbes.com/sites/trevornace/2017/04/28/mystery-of-antarcticas-blood-falls-is-finally-solved/>.)

Weather phenomena are the most unique ones. Light pillars are one of them. They look otherworldly, like beams of light coming from an extraterrestrial spacecraft. Narrow light paths are visible extending from the sky usually in the Arctic, and also some places in the US and Canada, where it's extremely cold. This illusion is created when cold air turns the moisture in the air to crystals. The crystals then slowly descend towards the ground. When lights from surrounding such as street lights hit the crystals, the effect results in a beautiful, thin and tall light illusion.

(Source of above recent phenomena: (<https://www.holidify.com/pages/unusual-natural-phenomena-around-the-world-1593.html>)

The above are some recent bizarre paranormal phenomena turned into normal when **their** causal roots were found and we are no longer surprised about their mysteries.

The distinction between Paranormal and Normal vanishes with the advancement of science. How else, “Thunder” and “Lightening” which must have frightened the primitive man as Paranormal events and the above paranormal phenomena became casual and normal events when science advanced and gave causal reasons not only for their manifestation but also explained the conditions which made these happen. How true appear the immortal words of St. Augustine, who, once said, “Miracles do not happen in contradiction to nature but only in contradiction to that which is known to us of nature.”

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The contradictions known to us of nature do exist even now and we consider UFOs (Unidentified Flying Objects) miracles as we do not know much about them. Bermuda Triangle still haunts us as it has swallowed many ships and aircraft due to unknown reasons. The manifestation of crop circles baffles us when we see a uniform patch in the agricultural field where the crop is flattened without any apparent cause. We are wonderstruck to find Nostradamus's prophecies (made in the 16th century) coming true since then and may continue in the coming centuries as well. Apart from the above, we are amazed to see the results of Colour Therapy, Dowsing, and Reiki which defy scientific causal understanding and there may be many more which are not covered here..

To date all these are Paranormal and maybe future research will unfold causal reasons behind them and with the advancement of science, these will turn into normal phenomena. There have been attempts to unfold the paranormal mysteries.

Let us, now, delve deeply into validation attempts at psychic and non-psychic paranormal phenomena and explore research for these phenomena: ***Validation attempts on Psychic Paranormal Phenomena***

In this section, we shall acquire deeper knowledge and explore research done for validating Psychic phenomena, namely, ESP, Psychokinesis and Survival issues.

Extra Sensory Perception

As explained earlier, normal human perception happens through our five known senses, namely, seeing, hearing, smelling, tasting and touching. But when we happen to perceive something without using these known senses, we experience extra-sensory perception (ESP). Telepathy, Clairvoyance and Precognition come under these extra-sensory perceptions. We know these terms through real-life experiences, some of which were presented in the above paragraphs. Such incidences keep on happening sporadically and spontaneously across the world and these paranormal psychic experiences keep on baffling us.

In the coming paragraphs, we shall delve deeply into each component of ESP in a structured way and shall explore the validating attempts done by researchers.

Telepathy – Telepathic instances have been happening from time immemorial and even today, these are part of our daily life. Mind-to-mind connection is not uncommon. In the ancient epic Mahabharata, Lord Krishna was a great Telepath. He could read the minds of people, how else, could he perceive the cries of Draupadi even when he was not in the court where she was being disrobed by Dushaashana?

Even in the Western world, such instances are quoted in history. Herodotus recorded the first known telepathy experiment when, in 550BC, King Croesus of Lydia challenged seven famed oracles to tell his messengers exactly what he was doing on a given day. Only Pythia, the priestess of Apollo at Delphi, answered correctly - Croesus was making lamb and turtle stew in a bronze

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kettle. The tale may be apocryphal, and Croesus's misinterpretation of the oracle's advice eventually led to his defeat - but as an experiment, parapsychologists admit it wasn't bad. Source: (<https://www.theguardian.com/education/2003/sep/18/research.highereducation5>)

Modern interest in thought transference arose in late 18th-century France when it was observed as a side effect of Franz Mesmer's proto-hypnotic work. As captured in my book², Mesmer (1733-1815), while experimenting on the effect of magnets on physiological functions of the body (e.g., blood flow rates) realized that there existed energy in the universe which flows in our body as well, and if the distribution of this energy is balanced, the body remains healthy. Imbalance leads to sickness and health disorders.

He termed this energy in the body as “Animal Magnetism”. To treat health disorders; animal magnetism could be transferred from a healthy body to the patient to bring uniformity of this energy to cure the person. The transference could be done simply by touch.

He could cure many patients having fits and seizures. He and his disciples, while doing this therapy, found that their patients, during therapy went to sleep-like state and were responding to their commands. The phenomenon became popular as, “Mesmerism”, which ultimately, over a period of time developed into “Hypnotism”- a therapy used even now by Psychologists to treat patients with mental disorders. Not only that, but, the use of a trance-like mental state is also made in current experimental parapsychological research.

Some of Mesmer’s patients, in a sleep-like state, were able to gain access to information/events that were inaccessible to them through normal means, e.g., describing actions done by a person in another room. These were the first ever known instances of Telepathy witnessed under controlled conditions.

The term telepathy - meaning distant occurrence or feeling - was coined by Frederic Myers, a founder of the Society for Psychical Research (SPR), in 1882. Myers thought his term described the phenomenon better than previously used terms such as the French “*communication de pensees*,” “thought-transference,” and “*thought-reading*.”

Validation Attempts for Telepathy

The phenomenon of Telepathy and other psychic phenomena were studied by SPR and this seems to be the first structured attempt to validate paranormal phenomena.

Scientific investigation and attempts to validate Telepathy began by SPR. Wikipedia³ mentions that the members of the SPR initiated and organized the International Congresses of Physiological/Experimental psychology. Areas of study included hypnotism, thought-transference, mediumship, Reichenbach phenomena, apparitions and haunted houses and the

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physical phenomena associated with séances. The SPR were to introduce a number of neologisms which have entered the English language, such as 'telepathy', which was coined by Frederic Myers. Among the first important works was the two-volume publication in 1886, *Phantasms of the Living*, concerning telepathy and apparitions, co-authored by Gurney, Myers and Frank Podmore.

Wikipedia on Telepathy⁴ also gives credit to SPR for initiating research into Telepathy when it says--According to historians such as Roger Luckhurst and Janet Oppenheim the origin of the concept of telepathy in Western civilization can be traced to the late 19th century and the formation of the Society for Psychical Research (SPR). As the physical sciences made significant advances, scientific concepts were applied to mental phenomena, with the hope that this would help to understand paranormal phenomena. The modern concept of telepathy emerged in this context. However, Psychical researcher Eric Dingwall criticized SPR founding members Frederic W. H. Myers and William F. Barrett for trying to "prove" telepathy rather than objectively analyze whether or not it existed.

The focus to prove that Telepathy existed as a human capability began with J B Rhine who began experimental research on Telepathy and Clairvoyance. In fact, Rhine is considered the father of ESP, the term coined by him. He was the first person to study Paranormal in the laboratory.

Validating Telepathy through experimental research

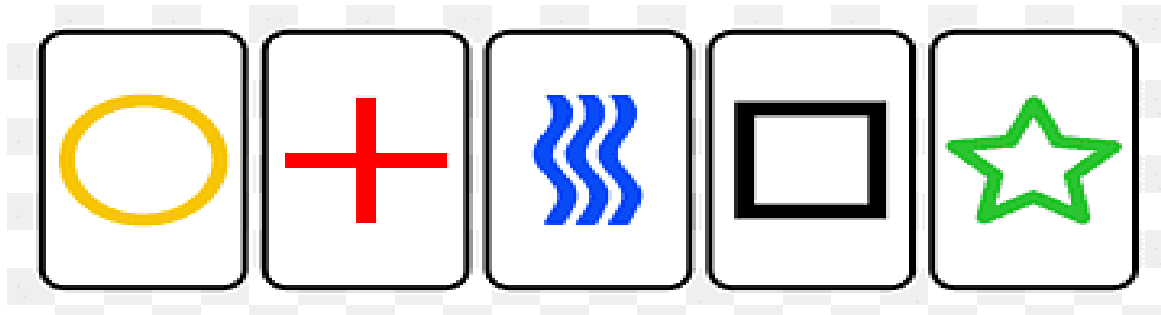
The 1930s saw remarkable achievements got by Dr J B Rhine in his laboratory experiments on telepathy using Zener Cards.

Nick Joyce and David B Baker⁵ write-- Duke University perceptual psychologist Karl Zener, PhD, (1903-64) designed the cards in the 1930s for experimental ESP research with fellow Duke psychologist J.B. Rhine, PhD (1895-1980).

Rhine became interested in examining ESP, and he set up a laboratory to test subjects for psychic abilities.

One of his experiments involved the cards, which came 25 to a pack. Inside were five cards each of five different designs--a circle, cross, wave, square and star--chosen because each had one more line than the other. The back side of the card had a blue background with a design and a Duke building. Although Rhine did much of the research, he had Zener design the cards since Zener was a perceptual psychologist.

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(Figure 4: Deck of 25 cards had 5 cards of each of above shapes)

In his experiments, Rhine would hold up the card with the back side forward and ask the subject to tell him which design was on the front of the card to test Telepathy. The card seen by Rhine could be read by the subject by reading his mind.

He conducted tests in myriad conditions seeking to remove outside forces that would clue subjects into what was on the card. For example, to remove shuffling errors, he used a machine to shuffle cards. To eliminate the chance of card counting, he did not tell subjects if they were correct or not on a guess. To remove physical or facial cues, he put the subject and experimenter in different rooms. In one test, he put a high-performing subject and experimenter 250 yards apart.

All of these tests were done in different conditions to strengthen the scientific validity of the results.

The guesses were recorded and the correct guess was termed as “success” and the wrong guess, “failure” The probability of success was 20% (1 in 5 because there were five types of cards) due to chance causes but if the probability of success turned out much above 20 %, it went to establish that the successes were not happening due to chance but were results of telepathic ability. In a large number of trials each having a large number of testings, it was statistically established that the successes achieved had a probability statistically significant above 20% (the chance level). The experiments created a lot of excitement as they went on to establish the validity of Telepathy.

In 1934, Rhine published the book "Extra Sensory Perception" summarizing his years of research with the cards. He believed the data were supportive enough of ESP (which included Telepathy) to warrant continued investigation. Rhine's decades of research inspired the growth of parapsychology and brought credibility to the efforts on validating Psychic Paranormal.

In subsequent years parapsychological researchers got impressed by the Ganzfeld effect and research on Telepathy was conducted using this effect.

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The *Ganzfeld effect* (from German for "complete field"), or *perceptual deprivation*, is a phenomenon of perception caused by exposure to an unstructured, uniform stimulation field. The effect is the result of the brain amplifying neural noise in order to look for the missing visual signals. The Ganzfeld effect produces the ganzfeld state where a person's psychic abilities get enhanced.

Credit goes to Charles Honorton who conducted experimental Ganzfeld experiments to validate Telepathy at Maimonides Medical Centre at New York.

Ganzfeld experiments to validate Telepathy

In a typical ganzfeld experiment, a "receiver" is placed in a room relaxing in a comfortable chair with halved ping-pong balls over the eyes, having a red light shone on them. The receiver also wears a set of headphones through which white or pink noise (static) is played. The receiver is in this state of mild sensory deprivation for half an hour. During this time, a "sender" observes a randomly chosen target and tries to mentally send this information to the receiver. The receiver speaks out loud during the 30 minutes, describing what they can "see". This is recorded by the experimenter (who is blind to the target) either by recording onto tape or by taking notes and is used to help the receiver during the judging procedure.

In the judging procedure, the receiver is taken out of the Ganzfeld state and given a set of possible targets, from which they select one which most resembled the images they witnessed. Most commonly there are three decoys along with the target, giving an expected rate of 25%, by chance, over several dozens of trials.

Between 1974 and 1982, 42 ganzfeld experiments were performed by parapsychologists. In 1982, Charles Honorton presented a paper at the annual convention of the Parapsychological Association that presented his summary of the results of the ganzfeld experiments up to that date. Honorton concluded that the results represented sufficient evidence to demonstrate the existence of psi (including Telepathy).

The experiments showed that the probability of success was much higher than the chance probability and the results were statistically significant pointing to the validity of the assertion that telepathy is real.

Validity of Clairvoyance followed a parallel approach both with card-guessing experiments and Ganzfeld experiments. The only deviation was that there were no receivers or senders but only one person who did the guessing of targets to obtain a hit for success. Here again, the success probability was found much above the chance level and the phenomenon was validated as real.

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However, did we really validate the phenomena? We just proved its existence which, anyway, is proved by its anecdotal manifestation. The incidences happen and we see them happening hence we have not gained much by this way of validation. These still remain paranormal because we do not know their cause as we did for thunder, lightning and rainbows. The final validation will happen only through Causal Research. We shall explore Causal Research later, let us first look into validation efforts for Precognition, Psychokinesis and Survival Issues to accomplish complete discussions on Psychic Paranormal Validation.

Precognition Validation

Validation Research efforts into Precognition are provided below:

An article which appeared on November 28, 2016, in The Psychic Life-Exploring the Spiritual Web⁶ gives a brief history of Precognition Research as follows:

The history of precognition or the ability to see into the future has been recognized since ancient times when seers, diviners, and mediums were regularly sought by kings and ordinary people alike for their access to the future.

However, scientific studies on the phenomena were not conducted until recently. It was British aeronautics engineer, J.W. Dunne who first conducted a systematic study on precognition after discovering that his dreams turned into reality a few days after having them. Dunne began his study on precognition and discovered that he shared the same ability with numerous others. In 1927, he published his findings and theories in the book, "An Experiment with Time." He theorized that many people possess the ability of precognition, but this is not recognized due to failure to recall the dream or analyse the dream symbols properly.

Other studies followed Dunne's. The most sophisticated and systematic study on ESP and precognition at that time was done by J.B. Rhine at Duke University. Rhine, a psychologist, and his wife Louisa conducted experiments on ESP at the Parapsychology Laboratory at Duke University in the 1930s. This resulted in the largest compilation of dream evidence from thousands of accounts of ESP experiences available to research today.

J.A. Barker, an English psychiatrist, established the British Premonitions Bureau in 1967. This agency collected data using individuals who had precognitive abilities in order to gather early information about impending disasters. Another agency created in an attempt to study and use the knowledge gained from precognition was the Princeton Engineering Anomalies Research Lab, which spent years on research studies. It was eventually closed in 2007.

The validation efforts, here again, restrict to proving the existence and not causality. We shall take this up later in the paper. Next, we move to Psychokinesis.

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Psychokinesis Validation efforts

A brief account of research on Psychokinesis is available in my book, “Parapsychology — Trending towards causal research”⁷. Some excerpts are reproduced here to bring home the research to validate Precognition:

Modern research in Psychokinesis begins with Rhine. In the 1930s American parapsychologist J.B. Rhine brought Psychokinesis into scientific laboratory testing when in 1934, a young gambler came to Rhine and told him he could affect dice with his mind. The results of Rhine's tests on the young man's ability were surprising and encouraging. Rhine went on to conduct further experiments to see whether a subject really could influence the outcome of tossed dice. By the end of 1941, he had tested more than 650,000 experimental die throws, with the results suggesting that psychokinesis was, indeed, possible. You may recall that in the Indian epic, Shakuni could influence the dice to bring desired numbers on the tossed dice.

The Princeton Engineering Anomalies Research Lab (PEAR) conducted Psychokinesis laboratory experiments in 1979. Bryan Adams⁸ gives an account of Psychokinesis research at PEAR and at other places which are reproduced below:

“The Harvard Crimson reported on the origin of the PEAR lab and some of it’s more famous studies. The lab came into being thanks to a curious Princeton undergraduate’s senior thesis in the late 1970s. Using a random events generator (REG), she tested whether a subject could use psychokinesis to produce an unambiguously non-random outcome. The REG was basically a coin-tossing machine, and the undergrad's goal was to see if the subject operating the REG could mentally manipulate the machine into tossing more heads than tails (or tails than heads). The findings of this experiment suggested a small difference between those REG trials that involved a human participant and those that did not. Small, but statistically significant.

The student’s thesis advisor was Robert G. Jahn, then the dean of the Princeton School of Engineering and Applied Sciences. He was so impressed by her success that he included the study of psychokinesis as one of his research areas, eventually founding the PEAR lab. One of PEAR’s landmark studies was the experiment with the billiard pools. Jahn set up a device that dropped 9,000 billiard balls into a series of 19 cartons. When no human being was present during the experiment, the balls consistently dropped in a cascading effect, with the centre carton getting the most balls while the cartons to its left and right got progressively fewer. When a human participant was asked to try to psychically alter the machine, the bulk of the balls shifted right from the centre.

In 1984, the US Army Research Institute asked the National Academy of Sciences to form a scientific panel to look into evidence from 130 years of parapsychology research. The army was interested in the potential military applications of psychokinesis (it would be valuable to have somebody who could jam or disrupt

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an enemy's weapons remotely). There were people in the military who believed in psychokinesis, and who made visits to the PEAR lab.

In 1988, prolific author (and former doctor) Michael Crichton claimed to have had a successful experience with psychokinesis at a spoon-bending party in his autobiography Travels. "The party began: a hundred people selecting spoons and saying, 'Will you bend?' and tossing them back in the pile if the feeling wasn't right...rubbing her spoon, Anne-Marie said, 'I don't think this is going to work. This is silly. I just don't see how it can work.' I looked down at her hands. Her spoon was bending.

There have been plenty of credible individuals in the public sphere who claim to have witnessed psychokinesis first hand. French biologist Remy Chauvin, author Michael Talbot, and Dean Radin, senior scientist at the Institute of Noetic Sciences, to name a few."

Duggan M⁹ mentions Meta-analysis and gives an account of the great work done by Schmidt using Random Number Generators to prove the existence of Psychokinesis ability in humans.

Causal research for Precognition is still in its infancy and unless it happens, we shall be far away from validating this phenomenon.

Coming to Survival Issues (Life After Death) the last part of Psychic Paranormal Phenomena, I wish to state that this is the most difficult field of research because to deeply explore it one has to die and since the ticket is one way, you can't come back and narrate the findings. Still the originator of psychic research, the founding father of SPR Frederic Myers did make such an attempt and could be considered as an attempt to validate the Survival Phenomenon:

Validating Survival research

Frederic Myers was one of the founders of SPR in 1882, which started psychic research in a structured manner for the first time. His work was published posthumously in his book *Human Personality and Its Survival of Bodily Death* (1903). He did pioneering work in survival research and he promised that if there is life after death then after his death, he would communicate with the living mediums through automatic writings to reveal to the world the secrets behind life after death.

It appears that he did keep his promise. He was so dedicated to this field of research that his work continued even after his death and that he continued to communicate till 1931 to psychics around the world in his own style by giving fragmented pieces of information which did not make any sense to the receiver but when pooled at SPR as per Myers

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instructions, fitted like a jigsaw puzzle and brought forth his thoughts comprehensively. He did so because if he narrated this to one medium this would possibly be brushed off by the world as figments of the imagination of that medium and not coming direct from discarnate Frederic Myer. These details are well covered in a book by Erica Simon¹⁰.

The pooled information received from discarnate Frederic Myers by different mediums gives details about the seven stages after death. The details are available in a recent paper by Kevin Williams¹¹.

The messages from discarnate Myers tells the transition from life to after life at the time of death and he gives a vivid account of four phases of life that he experienced after death, his narration goes to seven phases—five to seven are based on his learning from other colleagues in the discarnate world in after life.

It is astonishing that some hypnotists when in a hypnotic séance took their subjects into their childhood and persuaded them to transgress even beyond. The narrated experience of the subjects from early life to beyond their death, matched startling to the early phases narrated by Myers. The coincidence is incredible. Maybe the messages of discarnate Myers have some real truth.

Apart from the Myers validation attempts, there have been some theories put forth by Parapsychological researchers. We shall discuss these theories now

Theories on life after death

Researchers have put forth several theories, some of which are as follows:

- **Survival Theory**- Moreman¹², Krippner¹³ suggested in their survival theory that the communications with deceased do happen through direct experience, or through mediums. They have the ability to call spirits and communicate with them. People are found to have memories of past life, which shows that reincarnation is possible. Indian Holy book, “Bhagwad Gita” gives philosophical details about survival theory. As per Hindu philosophy, our soul leaves the physical body at death but survives death and then it keeps looking for another body. It is reborn to refine and make the soul purer. The soul changes the body as we change our clothes in real life. The cycle of birth-death-birth continues and with each birth, the soul gets purer and when it achieves its purest form, it does not get reborn as another person but reaches its ultimate goal of salvation when it merges with Supreme God. The theory supports communications with deceased people through mediums i.e., mediums (the psychic) can call discarnate spirits and talk to them. The theory believes in after-death communication, ghosts and reincarnation.
- **Super psi theory** (Braude¹⁴; Sudduth¹⁵) discards Survival Theory. It does not believe in discarnate spirits and asserts that nothing survives after bodily death. But then how do after-death communications happen? Anecdotal incidents have shown that many times

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people get to know things which were known only to the deceased person. If there is no life after death then how does this after-death communication happen? The theory explains this by propagating the idea that after death communications happen due to the super psi ability of mediums.

- **Radical Survivalism theory** by Lance Storm¹⁶ is next in line. This theory treads a medium path between the two earlier theories –it does not believe in discarnate spirits but suggests a continuation of life through knowledge forms which do not stop with death but remain alive and get submerged in Absolute knowledge Form—the theory, though, makes use of psi theory to explain discarnate communications. The theory is mid-way between Survival Theory and Super psi Theory.
- **Energy Survival Theory** is presented in my recent paper¹⁷. This theory is a scientific improvisation of Survival Theory where the soul is replaced by a Subtle energy form which is a unique identity for each living species and is called the Individual Self Energy Form (ISEF) which is invisible. According to this theory, we are nothing but *subtle energy form ISEF* and since energy cannot be destroyed, it only gets transformed, we also change forms from invisible ISEF to different visible energy forms called Self Life Energy forms (SLEFs) which are real-life entities. At death, the person in the form of SLEF gets transformed back to his/her unique invisible genderless identity ISEF and subsequently, it is born as a different SLEF with a new name—it could be a human or animal or insect. It could be a male or a female. It could be born on Earth or any other planet but when it dies this live energy form gets transformed back into its unique invisible ISEF. The cycle of birth-death-birth goes on with energy transformations ISEF-SLEF-ISEF-SLEF... Birth happens with fertilization when ISEF gets entangled in the combination of sperm and egg and the chemical reaction becomes a biological one with fertilization. This theory gives a scientific foundation to Survival Theory. Complete details of my “Energy Survival Theory” are available in my paper¹⁷

You must have observed that the validation attempts of the Psychic Paranormal Survival phenomenon are limited to theorization and have not gone beyond the theories. Unlike ESP/ PK phenomenon which at least scientifically validated existence, the survival validation has not yet reached even that stage. Validation exploration is difficult because to explore what happens after we die, we have to die and since the ticket is one way, we can't come back and validate the phenomenon.

In the above discussions, we have seen that validation efforts have not gone to the extent to turn the paranormal psychic phenomena into Normal phenomena because we could not reach the causal roots. Causal research is the only way to turn Paranormal into Normal. Some work is done which is presented below:

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Causal Research to validate psychic paranormal phenomena (except survival issues)

The validation process for ESP and Psychokinesis as discussed above has been to the extent of proving the existence of these phenomena as real but does not go beyond that to bring in complete validation. The statistical significance is suggestive only of the absence of chance cause and it is indicative that there are some assignable causes present for the manifestation of the phenomena but what exactly are the responsible factors needs further research. Complete validation can come only through causal research which brings forth complete facts as was done while validating thunderstorms, lightning and rainbows where science revealed the basic root causes which gave rise to these phenomena.

In the next paragraphs, we shall explore what work has been done towards causal research for ESP and Psychokinesis and will also look at the way forward.

Causal Research on Telepathy

One possible approach towards causal research is, probably, shown by Nikola Tesla.

Nikola Tesla, the genius working on electrical energy during Edison's time was toying with the idea that thoughts in the mind reflect, by reflex action, a picture on our retina and it could be possible to capture the same on an external apparatus. When he died, he was working on a project involving "Thought Projector"

Smith¹⁸ in his paper, "***Nikola Tesla's wildest Project-----Thought Projector***", mentions "When Nikola Tesla died, he left behind fascinating writings about inventions he never realized. One such invention is ***Der Gedankenprojektor***, a camera that could be used to photograph thoughts."

Tesla¹⁹ argued that if it is true that thought reflects an image on the retina, it is merely a question of illuminating the same properly and taking photographs & then using ordinary methods which are available to project an image on the screen.

"If this could be done then the objects imagined by a person would be clearly reflected on the screen as and when they are formed, and, in this way, each thought of the individual could be read. Our minds would then be "***Open books***"

Tesla's line of research is an extension of the fact that things don't need to be seen only with open eyes, one could, even, see things with closed eyes; the only difference will be that the objects to be perceived are not external but within the self --- i.e., images, instead of coming from the open eye, these can come directly to the retina as reflex images from thoughts created by the mind and the rest of perception activities in the brain continues as they do normally.

Tesla's thinking seems to be credible; thoughts, by reflex actions, must be producing images on the retina, how else could we see dreams??

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In fact, dreams may be thoughts portrayed as motion pictures which get reflected on the retina and through the normal processes of these getting converted into electrical impulses passing on information to neurons and synapses to make us see them as movies while asleep.

Bahar Gholipour²⁰ mentions, “Tesla’s plans never became a reality but researchers are still studying *vision* and exploring the idea of building mind-reading machines.

With machines becoming capable of reading minds, we may get a clue from their working and could then understand how the mind does read mind and how telepathy manifests. Maybe, then it would be possible to take a cue and develop a capability in us to directly see the thought pictures and thereby learn the thoughts going on in other’s minds.

If our scientists could invent such innovative equipment, we would have opened a door which offers a clue to get to the bottom of the mystery of “*Telepathy*”.

Learning how to project images from the retina to external equipment would lead to a better understanding of the human brain and thereafter further brain research may lead to tame telepathy so that we would be able to produce the phenomenon at our will after the causal aspects are learnt.

There is some progress made in brain research wherein it is being attempted to make thought transference between two brains through neural entanglements.

Kristyn Bates²¹ has some details:

She says- Recent advances in brain-computer interfaces are turning the science fantasy of transmitting thoughts directly from one brain to another into reality.

Studies published in the last two years have reported direct transmission of brain activity between two animals, between two humans and even between a human and a rat. These “brain-to-brain interfaces” (BBIs) allow for direct transmission of brain activity in real-time by coupling the brains of two individuals.

Brain-to-brain interface is made possible because of the way brain cells communicate with each other. Cell-to-cell communication occurs via a process known as synaptic transmission, where chemical signals are passed between cells resulting in electrical spikes in the receiving cell.

The electrical nature of the brain allows not only for sending of signals but also for the receiving of electrical pulses. These can be delivered in a non-invasive way using a technique called transcranial magnetic stimulation (TMS).

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A TMS device creates a magnetic field over the scalp, which then causes an electrical current in the brain. When a TMS coil is placed over the motor cortex, the motor pathways can be activated, resulting in the movement of a limb, hand or foot, or even a finger or toe.

Scientists are now working on ways to sort through all the noise in brainwaves to uncover specific signals that can then be used to create an artificial communication channel between animals.

The first demonstration of this was in a 2013 study where a pair of rats were connected through a BBI (brain-to-brain interface) to perform a behavioural task. The connection was reinforced by giving both rats a reward when the receiver rat performed the task correctly.

Hot on the heels of this study was a demonstration that a human could control the tail movements of a rat via BBI.

We now know that BBIs can work between humans too. By combining EEG and TMS, scientists have transmitted the thought of moving a hand from one person to a separate individual, who actually moved their hand. The BBI works best when both participants are conscious cooperators in the experiment.

The latest advance in human BBIs represents another leap forward. This is where transmission of conscious thought was achieved between two human beings in August last year.

Using a combination of technologies – including EEG, the Internet and TMS – the team of researchers was able to transmit a thought all the way from India to France.

Words were first coded into binary notation (i.e. 1 = “hola”; 0 = “ciao”). Then the resulting EEG signal from the person thinking the 1 or the 0 was transmitted to a robot-driven TMS device positioned over the visual cortex of the receiver’s brain.

In this case, the TMS pulses resulted in the perception of flashes of light for the receiver, who was then able to decode this information into the original words (hola or ciao).

Now that these BBI technologies are becoming a reality, they have a huge potential to impact the way we interact with other humans.

This seems to be a major breakthrough in validating Telepathy and the causal aspects related to brain functioning and the day is not far that we may start long-distance communication only through our brains.

In fact, all psychic paranormal phenomena viz Telepathy, Clairvoyance, Precognition, Psychokinesis and Survival issue are all basically related to the mind; and brain research will certainly lead to understanding the causes behind these paranormal phenomena. It is a known fact that still many areas of the brain are unexplored and brain research must have secrets hidden in

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those areas researching these unexplored areas of the brain will lead to revealing the causal roots of all the above phenomena.

While it cannot be denied that brain research is essential for validating Psychic Paranormal phenomena but this alone may not lead to the causal roots. Other branches of science also need to become a part of such research.

Breakthrough ESP Causal Research

While researching, I came across two papers by Dr Sonali Marwaha Bhatt and Dr Edwin C May, which paves the way towards a breakthrough in ESP causal research. The details of these papers are provided in my book¹⁸

The approach taken by neuroscientist Dr Sonali Marwaha Bhatt and Physicist Dr Edwin C May is to use Physics domain and Neuroscience domain in research to validate ESP psychic phenomenon. Their approach towards causal ESP research is totally different and is based on information flow in entropic conditions. Dr. Sonali Bhatt Marwaha and Dr. Edwin May have done exciting research to validate ESP by their theory that information flow and possibility of its perception without using the normal five senses is possible. The details are available in their paper “Rethinking Extrasensory Perception: towards a Multiphasic model of Precognition”, which does take a step towards ESP causal research. In this paper, the authors define precognition as an atypical perceptual ability that allows the acquisition of non-inferential information arising from a future point in space-time. Their Multiphasic Model of Precognition (MMPC) lists two phases: The first is the physics domain, which addresses the question of retro causation and how it is possible for information to traverse from one space-time point to another, mainly, through *entropic means*. The second phase- the neuroscience domain addresses the acquisition and interpretation of retro causal signals. The process involves three stages:

- perception of signals from an information carrier, based on psychophysical variability in a putative signal transducer;
- cortical processing of the signals, mediated by a cortical hyper-associative mechanism; and
- cognition, mediated by normal cognitive processes, leading to a response based on retro causal information.

As per the authors, the future challenges faced in their model are to find answers to: -

- What is the nature of a retro-causal signal carrier that propagates backward movement in time (in the Physics Domain)
- What is the nature of the Retro-causal signal transducer and its cortical connectivity (in the Neuroscience domain)

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The MMPC model provides a framework for future research to study fundamental questions regarding the nature of time, causality and information.

In another paper, Dr Sonali Marwaha and Dr Edwin May suggest that all ESP components do collapse to what they define as informational Ψ which has its central focus on Precognition which seems to encompass all other constituents of ESP. As per them be it Telepathy or Clairvoyance or Remote viewing, all these phenomena depend on the ability of the mind to get piercing thoughts which break the barrier of normal perception of seeing through eyes. In other words, these all require seeing through the mind's eye. We could even extend this to Precognition as being the ability to see through the mind's eye without any limit on time and space.

This suggests that since there is commonality (mind working) in all ESP constituents, could they not collapse into a single field of study. Precognition seems to encompass all the ESP constituents. Seeing through the mind's eye to perceive thoughts from another brain, seeing through the mind's eye to have clairvoyance (and remote viewing) in current times only form a subgroup of the capability of Precognition which is seeing through the mind's eye without limitation of space and time. May and Sonali have done excellent work towards causal research by bringing in the concept of "Informational psi"

The two papers together open the way forward for future causal research on ESP

Way Forward for causal research on ESP

Further research for PC (precognition) has to be in Physics Domain to find details of a retro-causal signal carrier that propagates backward movement in time.

Simultaneously work has to continue in the Neuroscience domain to find more details about the perception of retro causal signal transducers and their cortical connectivity in the brain.

It is clearly evident that unless these unknown areas in physics and neuroscience are researched, we shall not be able to find answers to challenges posed by unearthing the mystery of ESP.

The papers by May and Sonali lead us to think that if we are able to pursue further causal research on Informational psi involving precognition towing the approach outlined by them, we would have solved the puzzle of all aspects of ESP.

Way forward for PK and Survival research

For PK, brain research has to move forward as per the outline followed in the research discussed in the foregoing paragraphs which discussed advances in brain research for validating Telepathy. As for Survival research, Neurologists, Physicists and Medicine stalwarts must find out ways and means to validate any of the theories put forward for life after death.

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The messages coming posthumously from Frederic Myers has got credibility after those got corroborated through hypnotic seances which transgressed subjects beyond childhood to their previous lives. We must find out ways and means to falsify or prove the contents of those messages. This will go a long way in validating the survival phenomenon.

This completes our exploration of Psychic Paranormality Validation.

Now we move to explore and understand Non-Psychic Paranormal Phenomena and investigate validation attempts.

Non-Psychic Paranormal Phenomena and their validation attempts

The Paranormal Phenomena which does not relate to mind come under this category. These are prevalent as mysteries in mother nature, mysteries which are still beyond scientific understanding!

Observant as we are, we the humans when we look around, we find many phenomena which intrigue us. Thunderstorms, lightning and rainbows which used to intrigue the primitive man are no longer paranormal but still, mother nature has many secrets in her lap for current curious scientists. Some of them are being taken up for exploration here:

Unidentified Flying Objects (UFOs)

The first reports of '*flying saucers*' being sighted were on 24 June 1947 from the Cascade Mountains of Washington state, USA. A private pilot, Kenneth Arnold, reported seeing nine strange objects that moved at tremendous speed across the sky 'like a saucer skipping on water'. His sighting triggered a wave of similar reports from observers in North America and across the world. On 8 July 1947, a report came from Roswell, New Mexico, that a disc-shaped object had landed on a remote ranch and had been removed for examination by officers from the US Eighth Army Headquarters. The age of the flying saucer had arrived.

The acronym **UFO** is an abbreviation for the US Air Force term 'Unidentified Flying Object.' It was coined in 1950 by Captain Edward Ruppelt of '**Project Blue Book**', the USAF's official 'UFO project', to replace flying saucers, a term that was widely used by the media and public.'. (Source: <https://cdn.nationalarchives.gov.uk/documents/ufo-research-guide-2013.pdf>)

Observation of UFOs in the sky has led humans to speculate whether these are space ships from other planets and whether are there visitations from aliens. UFOs were a subject of study for last two centuries and the study of UFOs is termed Ufology.

Roswell incident brought the age of UFOs and the incident was shrouded in mystery. As per Britannica²²:

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In 1947 the United States and other countries were in the midst of a “flying saucer” craze, as people reported seeing strange objects in the sky that they claimed were spacecraft piloted by aliens. It was against this background that a rancher, W.W. (“Mac”) Brazel, discovered some unusual debris near Roswell, New Mexico. The material included tinfoil, rubber strips, and sticks. The following month he took the items to the Roswell sheriff, who in turn contacted the Roswell Army Air Field (RAAF). After collecting the wreckage, the RAAF issued an extraordinary press release that stated that a “flying disc” had been retrieved from a local ranch. The *Roswell Daily Record* immediately picked up the press release, and the story was printed with the headline “RAAF Captures Flying Saucer On Ranch in Roswell Region.”

However, later army covered it up by announcing that the “saucer” had actually been a weather balloon carrying a radar target—a device somewhat like a box kite, made of foiled paper fastened to a balsa wood frame. The mystery escalated when in 1980 Berlitz and Moore asserted in their book that the weather balloon explanation was a “cover story.” They argued that the original debris, which they believed was from a crashed flying saucer, had been flown to Wright Field (later Wright-Patterson Air Force Base) near Dayton, Ohio, and material from a weather balloon was “hastily substituted.

In 1994 the air force admitted that the recovered material was in reality from a U.S. spy balloon. Part of Project Mogul, was an attempt to monitor anticipated nuclear tests by the Soviet Union. In 1997 a definitive air force report—“The Roswell Report: Case Closed”—ventured the opinion that stories of alien bodies may have come from civilian witnesses who saw parachute crash test dummies, a severely injured airman parachutist, and charred bodies from an aeroplane crash during the 1950s.

But for many “Ufologists,” however, these explanations were seen as part of a continued cover-up by the U.S. government due to security concerns. The Mystery continues and UFO sightings continue.

UFO sightings in other countries

Nick Pope²³ talks about UFO sightings in UK:

UK UFO sightings

The UK’s best-known UFO sightings took place over a three-day period in December 1980 and are collectively known as the Rendlesham Forest incident. A UFO was seen near the Bentwaters and Woodbridge airbases, and at one point landed in the nearby forest. The Ministry of Defence (MOD) concluded that radiation levels at the landing site seemed “significantly higher than the average background”. Separate MOD and USAF investigations (Bentwaters and Woodbridge were US bases) proved inconclusive.

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Another fascinating case usually called the Cosford Incident, took place on 30 and 31 March 1993. Multiple sightings came in from around the UK over a period of six hours overnight; witnesses included military police at one airbase and the meteorological officer at a second. The latter described seeing a vast triangular-shaped craft flying slowly over the base, making a low-frequency humming sound, before suddenly accelerating away, many times faster than a military jet.

UFO sightings have been of interest in many countries, notable ones as described in Wikipedia²⁴ are as follows:

Brazil (1952–2016)

On October 31, 2008, the National Archives of Brazil began receiving from the Aeronautical Documentation and History Center part of the documentation of the Brazilian Air Force regarding the investigation of the appearance of UFOs in Brazil. Currently, this collection gathers cases between 1952 and 2016.

Chile (c. 1968)

In 1968, reports came from the general public, civil aviators and the Chilean Air Force regarding the sightings or the appearance of UFOs in Chile, the initial work was an initiative of Sergio Bravo Flores who led the Chilean Committee for the Study of Unidentified Space Phenomena, supported even by the Chilean Scientific Society.

Canada (c. 1950)

In Canada, the Department of National Defence has dealt with reports, sightings and investigations of UFOs across Canada. In addition to conducting investigations into crop circles in Duhamel, Alberta, it still considers "unsolved" the Falcon Lake incident in Manitoba and the Shag Harbour UFO incident in Nova Scotia.

Early Canadian studies included Project Magnet (1950–1954) and Project Second Storey (1952–1954), supported by the Defence Research Board.

France

The most notable cases of UFO sightings in France include-the Valensole UFO incident in 1965, and the Trans-en-Provence Case in 1981.

India

Wikipedia -UFO sightings in India²⁵ gives the details:

- **1951-** *On 15 March, 10:21 a.m. in New Delhi, members of a flying club saw a cigar-shaped object in the sky which was about one hundred feet long. The UFO hovered for some time and then vanished from sight.*
- **2004---** *On September 24, a team of scientists in Samudra Tapu spotted a white object resembling a "snow man" on top of an adjacent mountain ridge at around 6:45 a.m. India Today speculated the UFO could be "a spy drone from across the border" or "a spy balloon".*

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- **2007**--On October 29, a fast-moving object was spotted at 30° in the eastern horizon at Eastern Kolkata between 3:30 and 6:30 am and was filmed using a video camera. Its shape shifted from a sphere to a triangle and then to a straight line. The object emitted a bright light forming a halo and radiating a range of colours. It was spotted by locals and hundreds gathered along the E.M. Bypass to catch a glimpse of the UFO, triggering a frenzy. The video footage was released on a TV News channel and later shown to Dr D P Duari, the director of MP Birla Planetarium, Kolkata, who found it to be "extremely interesting and strange". Duari later identified the object as be the planet, Venus.
- **2013**---Residents of Mogappiar, Chennai observed five specks of bright orange light moving from south to north around 8.55 pm on 20 June which was later reported in the local newspaper on 23 June. On 4 August, soldiers of the Indian Army observed unidentified flying objects over Lagan Kher Area, Demchock, Ladakh. It was also reported that army troops had observed more than a hundred different incidents of UFO movements in the border areas of Arunachal Pradesh in the preceding seven months.
- **2014**---A series of pictures of the sunset over the Rajajipuram area of Lucknow on 23 July claimed to show a UFO. A commercial pilot reportedly informed the Mumbai Air Traffic Control room that she spotted a black and blueish UFO near Pune during the first week of October at a height of about 26,300 feet. A photograph published by the news media claimed to show a "nail-shaped" UFO over Kochi in the southern Indian state of Kerala on 29 October.
- **2015**--In Gorakhpur, Uttar Pradesh, a local resident claimed to have taken a photo of a large UFO. However, a rash of similar photos from other parts of the world depicting the appearance of a UFO similar to the one in the movie *Independence Day* was most likely "created using digital editing software or even a mobile phone app, as some on the market allow UFOs to be blended into pictures". In June, a boy from Kanpur, Uttar Pradesh reportedly captured a flying saucer in his father's phone while clicking photos of clouds.
- **2021**---In January, some local residents from Ludhiana, Punjab claimed that they saw an unidentified flying object (UFO) in the sky. A similar incident occurred in December also.

The above gave anecdotal instances of the manifestation of UFOs in several parts of the world. Not much is published about the validation of the phenomenon because the findings and analysis have been kept as classified secrets by different countries. Still, whatever is available is presented in the next paragraphs.

Validation attempts for Paranormal phenomenon UFO:

In a paper titled "Some scientists want serious research into UFOs." Liz Kruesi²⁶ goes on to say that the official name for so-called UFOs is "**unidentified aerial phenomena,**" or **UAP** because they aren't necessarily solid objects. They could be odd signals in the atmosphere or some other earthly effect.

Looking into "unidentified flying objects" doesn't necessarily mean studying aliens. These may not be alien spaceships but could have earthly explanations. Some could be aircraft, for example, or atmospheric phenomena. But not all of these mystery effects have been explained. The US

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government is serious about it, Ronald Moultrie is the undersecretary of defence for intelligence & security. He says “insufficient data” is a barrier to understanding UFOs. “That’s one of the challenges we have,” Moultrie said.

That’s something scientists can help with, say Jacob Haqq Misra and Ravi Kopparapu. These researchers are *astrobiologists*. They study the potential for life beyond Earth. Haqq Misra works at Blue Marble Space Institute of Science in Seattle, Wash. Kopparapu is based at NASA’s Goddard Space Flight Center in Greenbelt, Md

Efforts for validation

NASA is taking UFOs seriously. On June 9, 2022, the U.S. space agency announced it will begin a study of Unidentified aerial phenomena (UAP). NASA is putting together a group of scientists and other experts to learn more about UAP.

Misra points out difficulties in pursuing UAP research by scientists and astrobiologists –All the data is held by Government and cannot be approached nor do we know about the instruments used in collecting the data. He goes on to say, “Military instruments are probably classified for good reason. That is, for our safety. I doubt we’re going to get the kind of data from the government that we need to scientifically answer what UAPs are. Even if you had that data — from the government or commercial pilots or others — it has not been purposely collected. These have been accidental, sporadic observations.

What you would need is to set up a network of detectors all around the world. Ideally, you’d have ground-based sensors and satellite coverage. It’s not enough for someone to just see something. You need to confirm a detection with multiple sensors looking at multiple wavelengths of light.

Kopparapu adds his points-Some UAP sightings are transient events. We need, for example, fast-tracking cameras. We also need optical, infrared and radar observations to collect more data. This would help us find patterns in the events’ behaviors.

And we need to share such data with scientists. That way, independent groups can reach a consensus. This is how science progresses. There are some efforts from researchers at universities in this direction.

The path to validate UFO or UAP as it is called now is tediously long and only the future (that too not the near future) will tell when this paranormal event will turn to Normal after all aspects including causal aspects are revealed. We have to wait and watch!!

We now move on to the next topic in non-psychic paranormal i.e., Bermuda Triangle

Bermuda Triangle

The Bermuda Triangle, also known as the Devil's Triangle, is an area of the Atlantic Ocean covering an imaginary boundary between Florida, Puerto Rico and Bermuda that is best known for its stories of ships and aeroplanes that seemed to have disappeared without a trace. The phenomenon is termed paranormal as the cause of disasters is unknown and the wreckage is seldom found.



Figure 5: A map showing the approximate area of the Bermuda Triangle in the Atlantic Ocean.

Source: <https://www.discovermagazine.com/planet-earth/the-bermuda-triangle-what-science-can-tell-us-about-the-mysterious-ocean>

Editors of Encyclopaedia Britannica²⁷ have put the following information in their facts finding paper--Reports of unexplained occurrences in the region date to the mid-19th century. Some ships were discovered completely abandoned for no apparent reason; others transmitted no distress signals and were never seen or heard from again. Aircraft have been reported and then vanished, and rescue missions are said to have vanished when flying in the area. However, the wreckage has not been found, and some of the theories advanced to explain the repeated mysteries have been fanciful. Although theories of supernatural causes for these disappearances abound, geophysical and environmental factors are most likely responsible. One hypothesis is that pilots failed to account for the agonic line—the place at which there is no need to compensate for magnetic

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compass variation—as they approached the Bermuda Triangle, resulting in significant navigational error and catastrophe. Another popular theory is that the missing vessels were felled by so-called “rogue waves,” which are massive waves that can reach heights of up to 100 feet (30.5 metres) and would theoretically be powerful enough to destroy all evidence of a ship or aeroplane. The Bermuda Triangle is located in an area of the Atlantic Ocean where storms from multiple directions can converge, making rogue waves more likely to occur.

Validation attempts for the Bermuda Triangle phenomenon

Let us look at the facts which are known and also the ones still a mystery and not known. Editors of Encyclopaedia Britannica²⁸ have enlisted known and unknown facts about Bermuda Triangle:

What is known about the Bermuda Triangle:

- *The Bermuda Triangle is a region of the North Atlantic Ocean (roughly) bounded by the southeastern coast of the U.S., Bermuda, and the islands of the Greater Antilles (Cuba, Hispaniola, Jamaica, and Puerto Rico).*
- *The exact boundaries of the Bermuda Triangle are not universally agreed upon. Approximations of the total area range between 500,000 and 1,510,000 square miles (1,300,000 and 3,900,000 square kilometers). By all approximations, the region has a vaguely triangular shape.*
- *The Bermuda Triangle does not appear on any world maps, and the U.S. Board on Geographic Names does not recognize the Bermuda Triangle as an official region of the Atlantic Ocean.*
- *Although reports of unexplained occurrences in the region date to the mid-19th century, the phrase “Bermuda Triangle” didn’t come into use until 1964. The phrase first appeared in print in a pulp magazine article by Vincent Gaddis, who used the phrase to describe a triangular region “that has destroyed hundreds of ships and planes without a trace.”*
- *Despite its reputation, the Bermuda Triangle does not have a high incidence of disappearances. Disappearances do not occur with greater frequency in the Bermuda Triangle than in any other comparable region of the Atlantic Ocean.*
- *At least two incidents in the region involved U.S. military craft. In March 1918 the collier USS Cyclops, en route to Baltimore, Maryland, from Brazil, disappeared inside the Bermuda Triangle. No explanation was given for its disappearance, and no wreckage was found. Some 27 years later, a squadron of bombers (collectively known as Flight 19) under American Lieut. Charles Carroll Taylor disappeared in the airspace above the Bermuda Triangle. As in the Cyclops incident, no explanation was given and no wreckage was found.*

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- *Charles Berlitz popularized the legend of the Bermuda Triangle in his best-selling book **The Bermuda Triangle** (1974). In the book, Berlitz claimed that the fabled lost island of Atlantis was involved in the disappearances.*
- *In 2013 the World Wildlife Fund (WWF) conducted an exhaustive study of maritime shipping lanes and determined that the Bermuda Triangle is not one of the world's 10 most dangerous bodies of water for shipping.*
- *The Bermuda Triangle sustains heavy daily traffic, both by sea and by air.*
- *The Bermuda Triangle is one of the most heavily traveled shipping lanes in the world.*
- ***The agonic line sometimes passes through the Bermuda Triangle, including a period in the early 20th century. An agonic line is a place on Earth's surface where true north and magnetic north align, and there is no need to account for magnetic declination on a compass.***
- *The Bermuda Triangle is subject to frequent tropical storms and hurricanes.*
- *The Gulf Stream—a strong ocean current known to cause sharp changes in local weather—passes through the Bermuda Triangle.*
- ***The deepest point in the Atlantic Ocean, the Milwaukee Depth, is located in the Bermuda Triangle. The Puerto Rico Trench reaches a depth of 27,493 feet (8,380 meters) at the Milwaukee Depth.***

What is not known about the Bermuda Triangle:

- *The exact number of ships and aeroplanes that have disappeared in the Bermuda Triangle is not known.*
- *The wreckage of many ships and aeroplanes reported missing in the region has not been recovered.*
- *It is not known whether disappearances in the Bermuda Triangle have been the result of human error or weather phenomena.*

One of the known facts quoted above is that “*Bermuda Triangle does not have a high incidence of disappearances. Disappearances do not occur with greater frequency in the Bermuda Triangle than in any other comparable region of the Atlantic Ocean.*” But this does not seem to be true because still, we do not know the exact number of ships and aeroplanes that have disappeared here.

The fact that we do not know ‘whether the disappearance was caused by human error or weather and also because even wreckage is not found’ goes on to suggest that a mystery shrouds the phenomenon and makes it a **paranormal event**. Only scientific investigations can lead to its basic roots and turn the paranormal into Normal.

Theories to validate Bermuda Triangle Phenomenon

One of the known facts as brought out in the above paragraphs talks about agonic lines and this fact could scientifically explain the phenomenon because the mariners, usually accustomed to accounting for a discrepancy in their compass readings, may make mistakes when very near to the agonic line that led them astray. Paired with the often-shallow waters of the island-strewn Caribbean Sea, navigational errors could lead to boats running aground on hidden shoals.

A paper by Nathaniel Scharping²⁹ puts forth some theories to scientifically validate how disasters at Bermuda triangle could have taken place:

*A common explanation for the Bermuda Triangle rests on magnetism. The Earth's **magnetic North Pole isn't the same as its geographic North Pole**, which means that compasses usually don't point exactly north. Only along what's known as agonic lines, which line up magnetic and geographic north, compass truly accurate. One theory posits that the Bermuda Triangle might be home to a large-scale magnetic anomaly, a region where the Earth's magnetic field lines are warped and twisted. This, too, could cause navigational mistakes. But, as others have noted, there's no evidence the Bermuda Triangle contains any unusual magnetic disturbances, something that's clear when looking at a **magnetic map of the region**.*

*More recently, some scientists have suggested that ship sinkings in the Bermuda Triangle could be due to **massive bubbles** released from undersea methane deposits. The seafloor in the region is known to contain large pockets of gas that could be released suddenly, turning the ocean into a frothy soup that swallows ships. A **similar process** likely created huge seafloor craters near Norway. But though the mechanism itself makes sense, there's no evidence of any recent methane release from the area around the Bermuda Triangle. The last time anything similar happened in the region was **around 15,000 years ago**, according to U.S. Geological Survey geologist Bill Dillon.*

*Another explanation for the Bermuda Triangle is the presence of rogue waves. These **huge waves can form unexpectedly** and rise two or even three times above surrounding waves. British researchers used lab and computer models to simulate the effects of rogue waves more than 100 feet tall on ships as part of an investigation into the Bermuda Triangle. Ships that were sufficiently long could get caught suspended between two wave peaks with nothing supporting them from below and snap in half, one researcher theorizes. But, while rogue waves are certainly capable*

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of capsizing or breaking a ship, we have no definitive evidence tying them to any of the naval disasters in the Bermuda Triangle.

The above theories seem credible but still, they are theories which need scientific validation.

An Australian scientist Karl Kruszelnicki claims to have solved the mystery of the Bermuda Triangle. Adam Lusher³⁰ brings the details:

Karl Kruszelnicki asserts that traffic in the Bermuda triangle area is huge and the number of disaster incidents is not many if we compare the instances with instances elsewhere, there is nothing extraordinarily difference, the only credible factor which makes the Bermuda phenomenon different from others is the incident of flight 19 and then its rescue plane also disappearing. This could not be a coincidence and there could be a mystery in this. But when he investigated the rescue plane's disappearance, this mystery was also set aside because these planes got lost due to the judgmental error of the pilot and the co-pilot.

Adam Lusher writes-

Mr Kruszelnicki offered simple explanations for the loss of Flight 19.

For a start, he said, a suggestion from some that the patrol vanished in ideal flight conditions is not correct. It wasn't fine weather, there were 15m (49ft) waves." Mr Kruszelnicki added that the only truly experienced pilot in the flight was its leader, Lieutenant Charles Taylor, and his human error may well have played a part in the tragedy. "[He] arrived with a hangover, flew off without a watch, and had a history of getting lost and ditching his plane twice before," said Mr Kruszelnicki.

Radio transcripts from before the patrol vanished, he added, made it clear that Flight 19 had become unsure of its position.

The transcripts show Lt Taylor thought his compass had malfunctioned and that he was above Florida Keys - a string of islands stretching to the southwest of the US mainland - when in fact later analysis by ground staff would show he was to the southeast, near an island in the Bahamas. Mr Kruszelnicki said Lt Taylor overruled a junior pilot who said they should turn west and insisted the patrol fly east, unwittingly taking them further into the Atlantic, above deep water where it might be harder to find sunken planes or bodies. "If you read the radio transcripts," said Mr Kruszelnicki, "Some of the junior pilots are saying, 'Why don't we fly to the west?', and the pilot says, 'Why don't we fly to the east?'"

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Even more damningly for the Bermuda Triangle ‘mystery’, said Mr Kruszelnicki, was the fate of the search-and-rescue seaplane that according to many reporters had vanished without a trace and was never found.

The fact is “It didn’t vanish without a trace,” said Mr Kruszelnicki. “[It] was seen to blow up.” There were several witnesses to the explosion; an oil slick and debris were found; and after the disaster, the US Navy grounded all other PBM-Mariner seaplanes. The aircraft had already gained the ominous nickname ‘flying gas tanks’.

To me, the assertion that mystery is resolved based on the above arguments does not seem to be based on solid foundations. Even if these cases were due to judgmental errors, what caused them and even if the plane was found burning instead of claiming that it disappeared without a cause; why did it burn-what caused the fire?

The real facts behind the mystery are still unknown and only theories are floating in spite of the efforts of investigators and researchers, the mystery continues to remain alive and we could not convert this paranormal phenomenon into normal through scientific research.

There are many such mysteries still not resolved. I shall be discussing ***Crop Circles*** before concluding the paper. Apart from this, we still do not know how Nostradamus made prophecies for a few centuries which are still coming true. ***Astrology*** and ***Homeopathy*** reveal startling results but are still considered Pseudoscience. ***Reiki*** and ***Colour Therapy*** yield solutions to health problems but we do not know their causal roots. All these are paranormal happenings. We shall now confine our discussions limited now to only Crop Circles because discussions on others if pursued, may turn this paper into a book.

Crop Circles

Crop circle phenomena—what are they

Aerial views from the top, depict the ***Crop Circles*** as large geometric patterns that appear in fields that are otherwise full of corn, wheat, barley, etc. The patterns are created when certain areas are packed down while others are left untouched. They tend to be very exact. Often, crop circles look like they were made by a machine. ***Crop Circles***, a large geometric pattern of flattened crops, were mostly often found in fields in southern England. Crop circles are said by some who have studied to be messages from intelligent extraterrestrial life, but many have been proved to be the work of humans. Crop circles appear regularly throughout the world, but the majority still appear in England.

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Figure 6— A crop circle in a wheat field in England (source: <https://www.britannica.com/art/crop-circle/images-videos>)

Formations are usually created overnight, although some are reported to have appeared during the day. The number of reports of crop circles has substantially increased since the 1970s. There has been a scant scientific study of them. Circles in the United Kingdom are not distributed randomly across the landscape but appear near roads, areas of medium to dense population and cultural heritage monuments. Nearly half of all crop circles found in the UK in 2003 were located within a 15-kilometre radius of the Avebury stone circles.

Unlike UFOs, crop circles are tangible — people can touch and walk into them.



Figure 7: crop circle enthusiast from Dublin lies on the ground to connect with what he believes are sacred energies in a crop circle in Wiltshire, England, in July. (Paul Kingsbury)

Source:(<https://theconversation.com/crop-circles-blur-science-paranormal-in-x-files-culture-86606>)

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An Australian report from the 1960s stated that a farmer saw a UFO and concluded that it flattened the crops in his field. This case was referred to as the Tully “saucer nest.” The farmer claimed that a UFO rose between 30 and 40 feet (12m) from a swamp. Upon investigation, he found a nearly circular area 32 feet long by 25 feet wide where the grass was flattened in clockwise curves. People believe that these circles appear for various reasons. Some believe it is “Mother Earth” sending signals to warn humans of climate change. Others still believe that UFOs and aliens are responsible for the intricate designs. A small number of scientists have found differences between the crops inside the circles and outside them. They cite this as evidence they were not human-made. In 2000, Colin Andrews, the man credited with the term “crop circles,” stated that the crops were flattened by magnetism.

As is with any paranormal event, there turn out people who create hoaxes and frauds. For Crop circles also two people Doug Bower and Dave Chorley made artificial crop circles as a prank. In September 1991, British duo Doug Bower and Dave Chorley admitted that they had made hundreds of crop circles since 1978. They even demonstrated their method of doing so. They used a homemade device made of a rope and a plank. The two claimed that they made crop circles as a prank. They wanted to make people believe that UFOs or aliens had visited Earth. Since they came forward, most crop circles have since been traced to copycat hoaxers. Still, some crop circle enthusiasts insist that there are other examples that cannot be explained away as a prank. (source: <https://www.wonderopolis.org/wonder/what-are-crop-circles>)

All manifestations of Crop Circles are not a hoax, still, causes of their formation are unknown to bring them in the category of Paranormal.

Let us explore the history of Crop Circles:

History of crop circles

Reports of crop circles may go back hundreds of years but maybe these were not reported as then there were no facilities available for aerial view and the patterns could not be recognized on fields. However, modern sightings really started piling up in the 1970s. Most of these were reported in England. The first crop circles (and still most common) were single circles. They both delighted and puzzled farmers. The news media also quickly became interested. As interest in crop circles grew, they began to appear in dozens of other countries, including the United States. Throughout the 1980s and 1990s, the number and complexity of crop circles grew. Some are very large and elaborate. Today, England remains the home of the largest number of crop circles. There's no doubt that crop circles are real. The evidence is there for all to see. However, their origin remained a mystery for quite some time. Even today, some people still cling to wild theories to explain crop circles. For example, some people believe that aliens make crop circles. They claim UFOs leave the patterns behind after landing on Earth. Others believe the explanation may be scientific. They point to powerful wind patterns or energy fields.

(source: <https://www.wonderopolis.org/wonder/what-are-crop-circles>)

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The symmetry of the pattern is remarkable; it so appears as if some round object landed on the area and by its sheer weight flattened the crop in a circular pattern. The object that landed could be a Unidentified Flying Saucer or airship but the real cause is still not known.

Wikipedia ³¹ says that the term was coined in the early 1980s by Colin Andrews. Obscure natural causes or alien origins of crop circles are suggested by *fringe theorists*. A fringe theory is an idea or a view point that differs from the accepted norms of the time within its field. The suggestions seem to have come from theorists who deviated from the standard way of thinking. However, the real cause is still unknown.

Attempts have been made to scientifically study and validate the phenomena. Let us examine this aspect:

Attempts to validate the paranormal phenomena of Crop Circles

Crop Circles could be formed by humans as was illustrated by hoax creators but all the crop circles were not created humanly. Who created them is the question is still unanswered. Was it the handiwork of aliens who can in Unidentified flying saucers landed on agricultural fields and left imprints of their saucer-like rockets? Was it due to poltergeist ghosts at play who flattened the crops? Was it a phenomenon created by nature by unusual whirlwind storms or were these handiwork of geological localized energy fields?

Kimberly Chaffee³² takes the speculations forward by commenting that people believe that these circles appear for various reasons. Some believe it is “Mother Earth” sending signals to warn humans of climate change. Others still believe that UFOs and aliens are responsible for the intricate designs. A small number of scientists have found differences between the crops inside the circles and outside them. They cite this as evidence they were not human-made. In 2000, Colin Andrews, the man credited with the term “crop circles,” stated that the crops were flattened by magnetism. And we have people who believe that many of these circles have a supernatural explanation.

All these are mere speculations emerging out of human fertile minds and lack scientific evidence. Evoluted new media vide their paper in Laboratory News bring forth some logical scientific arguments about the formation of Crop Circles. As per this paper³³,

“Cerealists (those who study crop circles) at the BLT Research group in the US claim to have found that in crop circles, the nodes of the crops are enlarged or even exploded and at a rate that is more concentrated in the centre than the outskirts of the circle. This piece of evidence is the basis of many theories of electromagnetic energy and ion plasma vortexes. The group also study unnatural bending of stalks, seed malformation and germination effects and clay crystallisation and has gathered a wealth of data from crop circles around the world.

At first glance, their work seems interesting or could even convince a sceptical mind that there is more to the story than creative hoaxers. However, three key points

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about the work of the BLT group worry me. The first is that while there is the correlation between effects, this does not tell them anything about the causation – this is a fundamental mistake in their analysis. The second problem is the potential conflict of interest – the research group and the people they associate with make a lot of money out of the belief that crop circles are mysterious. American tour groups have been known to pay \$2,000 to view crop circles, and theorists continue to make money from books and articles they publish as ‘experts in the field’ (pun intended). The third aspect that makes me worry is that if there really was any scientific merit in BLT’s work then surely scientists would be interested and active. Curiosity-driven scientists are not known for avoiding mysterious problems. The fact that there has been almost zero peer-reviewed research into crop circles makes me think that scientists are simply not interested in crop circles.”

There may be merit in the logical explanation given by *Cerealologists* despite the points raised by the writer of the above paper. While the last two points do not impress me, the first point about causal research not evident in the logical scientific statement does carry lot of weight. As was seen in the validating efforts of Psychic paranormal phenomena the thrust had been on proving that the phenomena were real and not on finding out the causal root, same appears to be the case here. It goes on to prove that the phenomena may not be man-made and there could be nature at work due to *electromagnetic energy and ion plasma vortexes*. It proves that the phenomenon of Crop circles is not a hoax or man-made but is a real paranormal phenomenon lying in the lap of the mystery of mother nature but the attempts to validate it through causal research are not evident.

Another attempt to validate Crop Circles is found in the paper by Stephen Wagner³⁴ :

There are peculiarities to "genuine" crop circles, the researchers say, that cannot be created or hoaxed by humans. Here is some of the often-cited evidence:

- *Number, complexity, and placement of crop circles.*
- *A highly intricate, mathematical design.*
- *Changes to plants. Some studies tested plants from inside and outside the circle in the same field and claim to find differences.*
- *Electromagnetic, radioactive, and physical effects claimed to be detected in the soil or plants in crop circles.*
- *Eyewitnesses and balls of light. There have been claims of seeing lights, strange clouds, and UFOs in conjunction with crop circles*

Even in this case the evidence logically goes on to prove that the paranormal incidents of Crop Circles are not man – made but are mysteries of nature.

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Another attempt to validate the phenomenon projects many theories but does not provide causal research on the matter.

The theories on the origins of crop circles are wide and varied. One explanation in the 1980s said that they are formed from overactive hedgehogs. Another theory says that specific wind patterns in an area could cause the crop to lie down. One theory includes the earth's energy fields and meridians. The force of the energy on the land would cause the crop to fall. But many people who believe in an extraterrestrial origin think that aliens use their enhanced technology to send energy down from outer space to create patterns in the crop. Others still believe that spaceships are the cause of the varying patterns in the ground.

So we conclude the discussions on crop circle with some theories for its causation but still no solid scientific evidence is found which could explain its causal roots and hence the phenomenon still remains paranormal.

With this, we close the discussions on Crop circles and also approach the end of this paper.

CONCLUSION

We have had a long discussion to understand Paranormality and discovered that paranormal incidents are of two types viz. Psychic and Non-Psychic. Psychic paranormal phenomena in themselves have become a big field of investigation and have given birth to a subject which is beyond psychology i.e., *Parapsychology*. Parapsychologists around the world are researching psychic paranormal phenomena. The research moved from anecdotal investigations to laboratory experiments. The thrust was on silencing the sceptics by proving that these phenomena were real and had a probability of occurring much above chance probability.

We also discussed some Non-Psychic Paranormal Phenomena in detail. We understood the phenomena of UFOs or UAPs; the Bermuda Triangle and Crop Circles. We peeped into the mysteries behind these Non-psychic Paranormal Phenomena. We also tried to explore the validation attempts for these. Here again, the focus on validation was found to be limited to extending possible scientific theories or at best to prove scientifically that the phenomena are not frauds but are real mysteries of nature.

Conclusion about validation attempts to paranormality

If we summarize the validation attempts of the Paranormal, both Psychic and Non-psychic, we find that we are still far away from finding scientific facts that will turn these paranormal into normal as had happened with Thunder, lightning and rainbows which got explained by scientific proof with the advancement of science.

Psychic paranormal research has become itself a vast field of study-Parapsychology and research to validate ESP, PK and Survival issues are continuing.

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In survival research, we have not progressed beyond putting forth several theories viz. Survival Theory, Super psi theory, Radical Survivalism Theory, and Energy Survival theory. We could not bring the research to a final conclusion because the theories are still theories and need to be proved scientifically. In ESP and PK we could at least prove that the phenomena are real but Survival research has still not been at that stage.

As for ESP and PK, scientific research has advanced a lot and reached the experimental validation stage. But it could only establish that ESP and PK are statistically significant phenomena as far as their realness is concerned and that these do not happen by chance cause. But still, we are yet to establish what causes them. Causal research has just begun but got stuck both in the physics domain and Neuroscience domain to find answers to questions which are blocking the causal research. The road ahead in this area seems to be brighter than other paranormal fields.

Non-Psychic paranormal validation attempts are still in the infancy stage. We have some theories and at best some validation attempts have succeeded in proving that the phenomena are real but we are still far away from a stage to find causal roots for the phenomena.

I look to the future where scientists will align to causal research in all paranormal fields and unravel the causal roots behind psychic and non-psychic paranormal phenomena and I am sure that the causal research will, one day, expand the horizons of science and shall unravel scientific pieces of evidence to turn all these paranormal fields into normal scientific fields.

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