

Ghosthunting and Science

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Stories of spirits, ghosts, demons, and encounters with otherworldly entities abound throughout the histories and literature of literally every culture the world has ever produced. Tales of helpful spiritual guardians, spiteful faeries, and vengeful wraiths figure prominently in many ancient stories. And they continue to be a topic for which modern man holds at least some fascination, given the number of movies released each year which deal with encounters with the supernatural. However, beyond the entertainment one may enjoy by telling ghost stories around a campfire, there is truly fascinating research being conducted into the realms of what is usually termed 'supernatural'. Researchers have, for more than a century, sought to plumb the depths of the unknown to find out what may lie beyond the cessation of life in the physical body.

The first organized body of researchers to band together and apply scientific techniques to the study of ghost phenomena was the Society for Psychical Research. Formed in 1882 by a group of distinguished Cambridge scholars, they immediately set about trying to formulate and prove theories on all subjects relating to the paranormal, including telekinesis and clairvoyance as well as haunting activity. Unfortunately, many of the early SPR members seemed to be too gullible, wanting desperately to believe the claims of many so-called mediums and psychics. This led to the downfall of many researchers, with the credibility of the SPR being severely damaged as a whole, when most of the charlatans who had been declared genuine by the Society later were shown to be fraudulent. Ironically, it was one of the SPR's own founding members, Harry H. Price, who debunked so many of the supposed psychics. These included psychics who Price himself had originally declared to be genuine. This unfortunate chain of events led to an inevitable schism between Price and the SPR, a side effect of which was that much of Price's research faded into obscurity. However, we now apply many of his theories and research methods to ghost hunting, marrying century-old theory with modern equipment and scientific knowledge.

Most paranormal investigators are at least moderately conversant with certain laws of physics. One of the strongest cases for the existence of life after death revolves around the First Law of Thermodynamics (also known as the Law of Conservation of Energy). It states: "Energy is neither created nor destroyed; it changes from one form to another." We know that all living beings contain a bioelectrical field, and that this field is intimately connected with consciousness. Given these facts, then upon the death of the physical body, one of two things can occur: The consciousness and its attendant bioelectrical field either convert to radiant heat energy and dissipate forever, or the field changes form into a new, but self-cohesive, state. Many scientists take an atheistic view, and believe that nothing survives the death of the physical body. However, this flies in the face of centuries of eyewitness accounts and well-documented modern evidence of the survival of at least a portion of the consciousness, without even needing to delve into

possibly problematic religious teachings.

Modern evidence gathering can take many forms. Many interesting, possibly even bizarre, investigative methods have been tested over the decades that modern paranormal research has existed. Most have fallen into disuse; the results, when there were any, were either too unreliable or completely unverifiable by any other researchers. However, a few methods have withstood the test of time. Probably the most effective, and yet most problematic, method employed is that of so-called ghost photography.

It is a proven fact that photographic equipment is fully capable of seeing much farther into the electromagnetic spectrum than the human eye is capable of perceiving. Special films capable of recording X-rays are employed every day for medical uses. Likewise, photographic film can be obtained which allows infrared and ultraviolet photos to be taken. It is the belief of all ghost researchers that ghost photographs are merely photos of phenomena in the very near infrared and ultraviolet portions of the spectrum. While this renders the object being photographed invisible to the naked eye, nearly all film and digital cameras are capable of capturing the image and presenting it to us as a visible photo. The usage of cameras in paranormal research dates back to the late 19th Century, and is considered to be our single most powerful tool. Unfortunately, it is also by no means foolproof.

One of the most serious problems paranormal researchers encounter is that of hoaxes. Most published 'ghost' photos are either deliberate falsehoods, or mistakes made by well-meaning but uninformed private enthusiasts. The most common form they take is that of the visibly bizarre but explainable double exposure. Simply put, when a photographic frame is exposed twice before picture development, then a strange 'otherworldly' double image may be obtained. Usually, these are easy to spot, even for the photographic novice. However, at times they can occur and look so authentic that even longtime researchers are fooled. Of course, photographic artists and experts can look and immediately see the underlying cause of the strange photo. This has the unfortunate effect of destroying ghost photography as a credible source of evidence, leading many skeptics to fallaciously assume that all ghost photos are tricks of light, shadow, over, under, and double exposure. Luckily, we now have new tools in our photographic arsenal.

Digital photography, and the privately affordable digital camera, has been of great use to the modern ghost hunting community. With digital photos, double exposures are nearly impossible. Likewise, as there is no developing process, development errors or flaws on the film can no longer happen. And most digital cameras can see quite far into the IR and UV portions of the spectrum. An easy test of a camera's capability is to simply aim a television remote at the lens and observe on the device's screen when one presses the volume button. The IR light emitted by the remote control will be visible on the camera's screen. Another extremely useful tool is the IR capable camcorder. Most major manufacturers of domestic electronics have at least one or two camcorders that are "night vision" capable (i.e. The Sony NightShot). These infrared enabled recorders have a small emitter on the front of the camera. While the range of these emitters is generally limited to no more than 10 feet, special extension devices can be purchased which easily extend

the IR beam to more than 80 feet. With these cameras, phenomena have been recorded which are very difficult to attribute to a mundane source. When operating multiple cameras under strict usage guidelines as per the manufacturer's operating instructions, mistakes can be nearly eliminated.

Nearly as common in usage as photographic equipment, electromagnetic field meters (or EMF detectors) have gained in popularity and utility in recent decades. All EMF sensors are designed to do one thing: measure the strength of electromagnetic fields in a given area. While they are invaluable tools, it is an uncomfortable fact that most paranormal researchers do not understand how to use these devices, or even what they are trying to prove by using them. Most EMF meters simply are not capable of measuring the fields we believe to be most likely associated with haunting activity. They were designed to measure manmade electrical fields within certain frequencies. Those frequencies almost always center on 50Hz to 60Hz, which are the frequencies of the electrical grids in Europe and North America, respectively. Some EMF meters can see further below 50Hz. A popular model is able to measure between 5Hz to 60Hz. But while most ghost hunters can tell an interviewer that it is important to register a wider range of EM frequencies, they cannot answer why it is. Most don't know that the frequency most often associated with haunting activity is centered on 40Hz, and is never an Alternating Current field, or manmade AC electricity. It is always Direct Current, or a natural DC electromagnetic field. I believe this is because the human mind's "operating system", if you will, registers as a DC electromagnetic field operating at or near 40Hz. So, the EMF sensors most ghost hunters utilize are not even capable of registering a ghostly energetic field, and what results they do get are almost always caused by manmade interference.

Another very commonly used method of investigation involves the employment of mediums or psychics. Many groups use "talents" in the course of their investigations to flesh out the sometimes-sketchy information available on the possible consciousness that inhabit the area under research. However, there is a vocal minority within the ghost hunting community that objects to the use of data gleaned from the use of these often self-proclaimed mediums. Simply put, not one single experiment in modern research has ever been able to conclusively prove the psychical talents of these so-called mediums. Worse still, many mediums appear to be in the field solely for the easily obtainable funding they can accrue from fleecing an unwary and gullible public. As a scam, it has its attractions: the general public wants to believe in ghosts, and will have almost no means of proving that they've been fooled by a con artist. Certain ghost hunters have taken it upon themselves to offer their services, free of charge, to anyone who is considering hiring a psychic or medium. Their offers usually involve thoroughly investigating the supposedly haunted location to see if there is even anything there for the medium to "cleanse". Very often, there is not. The phenomena experienced by the subject most often have mundane causes, which the frightened person's mind then expands upon, in a process, which is self-sustaining and gets worse over time.

Indeed, it is our perceptions of our environment, which seem to fuel most haunting activity. Most often, "ghosts" are nothing more than the intrusion of subconscious fears impinging upon our conscious thoughts.

Humans are diurnal creatures. We work and play while the sun is up, and at night we rest. During the day, therefore, we pay much less attention to the minute noises and occurrences that are constantly happening all around us. At night, our minds move to a more rest-like state. Small disturbances are suddenly noticeable. Noises we may have ignored all day suddenly take on newer, larger proportions. Items may seem to have moved, although usually we moved them ourselves during the day and forgot that we did so. Houses make settling noises as the temperature difference causes the wood inside them to contract. To the mind at rest, these things can take on frighteningly larger proportions. Coupled with our association of night with the realms of the dead, mundane occurrences very quickly become horrifying evidence of the presence of spirits.

However, while this may explain the vast majority of ghost sightings, it does not explain them all. Interestingly enough, perception plays a very important role in actual ghost activity as well. Based upon the research of Dr. Michael Persinger at Laurentian University, scientific ghost researchers (spearheaded by the Southwest Ghost Hunters Association,) have formulated a theory of ghost to person interaction that appears to explain the mechanics of the vast majority of ghost sightings.

Dr. Persinger founded the Behavioral Neuroscience Program at Laurentian University in Ontario, Canada. The program's research centers on the specific interactions between the human mind and different electromagnetic fields, in an attempt to explain otherwise mysterious sightings. In Dr. Persinger's own words, "As a human being, I am concerned about the illusionary explanations for human consciousness and the future of human existence. Consequently after writing the Neuropsychological Base of God Beliefs (1987), I began the systematic application of complex electromagnetic fields to discern the patterns that will induce experiences (sensed presence) that are attributed to the myriad of ego-alien intrusions which range from gods to aliens." (Internet, http://laurentian.ca/neurosci/_people/Persinger.htm)

The findings of Dr. Persinger's group have direct relevance to the field of ghost hunting. He has shown that the application of low frequency electromagnetic fields to human volunteers can induce hallucinatory states. His subjects reported feelings of euphoria, engaged in conversation with deceased relatives, and even experienced alien abduction scenarios. In many cases, the field frequencies used in research experimentation were the same as those found in anomalous "rogue" electromagnetic fields associated with haunting activity. So, it is possible that the vast majority of ghost sightings were purely perceptual, the witness having been manipulated by the electromagnetic energy of the anomaly to perceive whatever the ghost wanted the witness to perceive. Consequently, while human witnesses may behold a horrifying, grisly apparition, all that are captured by photographic equipment are the quite mundane appearing orbs, mists, and other photographic phenomena most commonly associated with ghostly presences.

Ghost stories, tales of the supernatural, strange occurrences, even poltergeists and avenging reaver spirits have played a giant role throughout most of human history. Our ancient ancestors in all parts of the world told stories to each other to try and explain their

world, or to teach valuable practical lessons, or sometimes merely to give each other a fright on a dark night around the campfire. But these stories must have had a basis in reality. The remarkable similarities between stories told in China with stories told in faraway Iceland strongly imply that the people at least had an impression of something else beyond the realm of the living. They believed, as many in the modern world still do, that the death of the physical body was not the death of the self. Consciousness is not bound together simply by our neurological network of interconnected nerve cells, but by the electrical field housed within our bodies. At the cessation of life, the consciousness may continue to exist in a new form. It is the discovery and understanding of how and why this happens, that drives modern paranormal research onwards.

About the Author:

Bob Carter is the Director of Research of the Southwest Ghost Hunter's Association. He has a educational background of 2 years at New Mexico Tech, double majoring in Astrophysics and Mathematics, 6 months working as an atmospheric physics research assistant at NM Tech University, cataloging and collecting thunderstorm data (storm chasing) .He has studied and worked in the field of computer science since 1978. Currently he is working as a UNIX systems administrator for New Mexico Software, specializing in server administration, systems integration, and network administration.