

Ghost-Hunting Mistakes

Science and Pseudoscience in Ghost Investigations

There are thousands of amateur ghost hunters around the world whose techniques are modeled after hit cable television shows such as *Ghost Hunters*, which claim to use good science. But a close examination of typical ghost-hunting methods reveals them to be mostly pseudoscience.

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Millions of people are interested in ghosts. One 2005 Gallup poll found that 37 percent of Americans believe in haunted houses, and even more believe in ghosts. The “reality” TV show *Ghost Hunters* has been a huge hit for the Syfy channel, lasting six seasons so far and inspiring other shows. The show’s ghost-hunting methods have been adopted by thousands of amateur ghost investigators across the country and around the world.

Just about every ghost-hunting group calls itself “skeptical” or “scientific.” Many investigators believe they are being scientific if they use electromagnetic field (EMF) detectors or infrared cameras—or if they *don’t* use psychics or dowsing rods. But the best way to know whether an investigator or group is scientific is to examine methods and results. Does the investigator use the pseudoscientific methods described here? What is the group’s track record of solved cases? Does an investigation end with inconclusive and ambiguous results or a solved mystery?

Ghost investigations can be deceptively tricky endeavors. Very ordinary events can be—and indeed have been—mistaken for extraordinary ones, and the main challenge for any ghost investigator is separating the facts from a jumble of myths, mistakes, and mis-

understandings. It can be very easy to accidentally create or misinterpret evidence: Is that flash of light on the wall a flashlight reflection—or a ghost? Are the faint sounds recorded in an empty house spirit voices—or a neighbor’s radio? It’s not always clear, and investigators must be careful to weed out the red herrings and focus on the verified information.

The most famous ghost hunters in the world, Jason Hawes and Grant Wilson (co-founders of The Atlantic Paranormal Society—T.A.P.S.—and stars of *Ghost Hunters*), agree that using science is the best way to approach investigations. They have always claimed to use good scientific methods and investigative procedures, for example writing that “T.A.P.S. uses scientific methods to determine whether or not someone’s home might be haunted,”

and “We approach ghost hunting from a scientific point of view” (Hawes and Wilson 2007, 270).

Yet in their 2007 book *Ghost Hunting: True Stories of Unexplained Phenomena from The Atlantic Paranormal Society*, Hawes allots a grand total of *four paragraphs* (within 273 pages) to a chapter titled “The Scientific Approach.” He doesn’t have much to say about science or scientific methods, and in fact it’s the shortest chapter in the book. Hawes is wrong in his belief that he and his T.A.P.S. crew are using good scientific investigative methods. After watching episodes of *Ghost Hunters* and other similar programs, it quickly becomes clear to anyone with a background in science that the methods used are both illogical and unscientific.¹

Some of the T.A.P.S. crew’s methods are slightly better than those of earlier groups (for example, Hawes and Wilson were among the first ghost hunters to dismiss the “orbs of light are ghosts” theory), but they are not much more scientific. The *Ghost Hunters* lacked good science to begin with, and their methods have not become any more scientific (or any more effective) since they began.

What follows is a short survey of the most common logical and methodological mistakes being made by the T.A.P.S. team and other groups that carry out ghost investigations.²

1. Assuming that no specialized knowledge or expertise is needed to effectively investigate ghosts.

One of the most common assumptions among ghost investigators is that in the paranormal field “there are no experts.” If there are no experts, then of course anyone can effectively investigate ghosts. Almost all ghost hunters are amateur, part-time hobbyists, and they come from all walks of life. On *Ghost Hunters*, two ordinary guys who work as plumbers during the day are touted as experts on ghost investigations, although none of the team members has any background or training in science, investigation, forensics, or any other field that might help solve mysteries.

Why it's a mistake: Paranormal investigation requires no certificate; anyone can do it with no training, knowledge, or expertise whatsoever. Whether they are *effective* or not—actually able to solve mysteries—is another matter entirely. *Effectively* investigating claims and solving mysteries *does* require some experience and expertise—specifically in investigation, logic, critical thinking, psychology, science, forensics, and other areas.

2. Failing to consider alternative explanations for anomalous or “unexplained” phenomena.

Ghost hunters often over-interpret evidence and fail to adequately consider alternative explanations, assuming for example that “orbs” are ghosts, EVPs (electronic voice phenomena) are ghost voices, and so on.

Why it's a mistake: The designation of “unexplained” or paranormal must be accepted only when all other normal, natural explanations have been ruled out through careful analysis. The explanation that orbs are flash reflections of dust, insects, mist, etc., has been widely discussed for years (see Radford 2007, Nickell 1994). Many ghost hunters who accept the scientific, skeptical explanation for orbs continue to record EVPs as ghost voices despite the fact that scientific evidence of the validity of EVPs is as poor as it is for orbs.

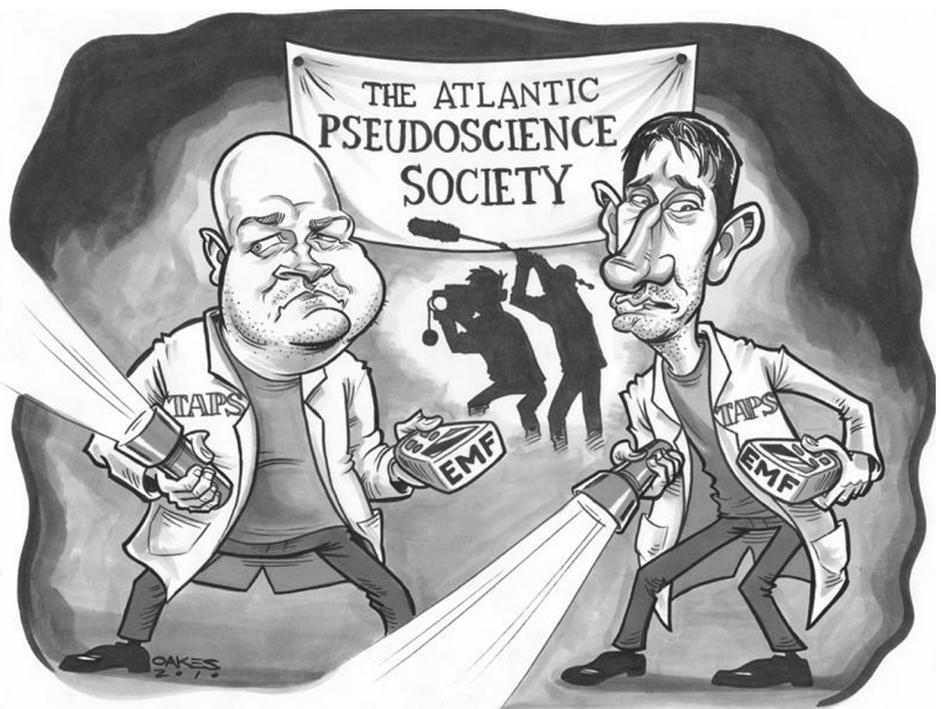
Another common error is over-interpreting supposedly anomalous phenomena. Ghost reports are filled with phrases like “one investigator heard a young girl singing softly” or “the shadow of an old man appeared in the hallway.” How, exactly, does the ghost hunter know for a fact it was a young girl’s voice or an old man’s shadow? I know adult women who can convincingly mimic the soft singing of a young girl or cast a shadow that might look exactly like an old man’s. It is of course *possible* that the sound and shadow are of a young girl and an old man, respectively, but an investigator must be careful not to go beyond the established facts and assume that his interpretation is the correct one. After you have made a specific, declarative statement like “a young girl singing softly,” you have locked yourself into that interpretation without keeping an open mind about other interpretations. Unless someone verifies the source of a sound, it is logically impossible to identify with any certainty who or what created that sound. An adult, an animal, a breeze whistling through an unseen passage, or something else altogether might sound like a child’s

voice. These types of reports are very common and cannot be accepted at face value.

3. Considering subjective feelings and emotions as evidence of ghostly encounters.

Ghost hunters often report descriptions of personal feelings and experiences like “I felt a heavy, sad presence and wanted to cry,” or “I felt like something didn’t want me there,” and so on (see, for example, Avakian 2010). They may also describe in detail how they got goose bumps upon entering a room or grew panicked at some unseen presence, assuming they were reacting to a hidden ghost.

Why it's a mistake: Subjective experiences are essentially stories and anecdotes. There’s nothing wrong with personal experiences, but by themselves they are not proof or evidence of anything. Most people who report such experiences are sincere in their belief that a ghost caused their panic, but that belief does not necessarily make it true. The problem, of course, is that there is not necessarily any connection between a real danger or a ghostly presence and



how a person feels. The power of suggestion can be very strong, and a suggestible ghost hunter can easily convince herself—and others—that something weird is going on in a dark and creepy house.

4. Using improper and unscientific investigation methods.

Ghost hunters often misuse scientific equipment and ignore good scientific research methods. A few typical examples of this type of error follow.

Investigating with the lights off

Nearly every ghost-themed TV show has several scenes in which the investigators walk around in a darkened place, usually at night, looking for ghosts. Purposely conducting an investigation in the dark intentionally hobbles the investigation and is completely counterproductive. It also violates common sense and logic: If you are trying to identify an unknown object, is it better to look for it under bright lights or in a darkened room? There are no other objects or entities in the world that anyone would think are better observed in darkness instead of light; why would ghosts be any different? Humans are visual creatures, and our eyes need light to see—the more light, the better. Darkness, by definition, severely limits the amount of light and therefore the amount of visual information available. Searching at night in the dark puts investigators at an immediate and obvious disadvantage in trying to identify and understand what's going on around them.

Furthermore, this strategy fails on its own terms. Although some report seeing ghosts as glowing figures, many people report them as shadows or dark entities. Searching a dark room for a shadowy figure is an exercise in futility. Unless a ghost or entity has been specifically and repeatedly reported or photographed emitting light, there's no valid, logical reason for ghost investigators to work in the dark. The reason it's often done for television shows is obvious: it produces more dramatic footage. It's spookier and more visually interesting to film the ghost investigators with night-vision cameras.

Sampling errors

In my book *Scientific Paranormal Investigation*, I explain why a ghost stakeout or overnight investigation is a bad idea. But there's another, less obvious, basic scientific mistake made by many ghost hunters. Usually ghost hunters will begin their stakeout by taking readings with their high-tech equipment. Even though a thorough investigation into *specific claims* or phenomena (such as a door opening on its own or a strange noise) can be conducted in a matter of hours, a complete investigation into a haunted location can't be done in a few hours or even during an overnight stay. The reason is very simple: a few hours or overnight is not enough time in which to gather enough information. Establishing a valid set of baseline (or control) measurements for what "normal" (i.e., presumably ghost-free) conditions are at the location takes a lot more time.

To know what is extraordinary for the area, an investigator must first determine what is ordinary. Many ghost hunters understand this general principle but greatly underestimate the importance of valid sampling. For valid experiments, scientists must take dozens—sometimes hundreds—of independent measurements and analyze the results to derive a statistical average (along with a range of normal variation), which then can be used as a basis for research. The time frames and number of samples that most ghost hunters use are far too small to yield any scientifically meaningful baseline numbers.

Using unproven tools and equipment

Many ghost hunters consider themselves scientific if they use high-tech scientific equipment such as Geiger counters, EMF detectors, ion detectors, infrared cameras, sensitive microphones, and so on. Yet for any piece of equipment to be useful, it must have some proven connection to ghosts. For example, if ghosts were known to emit electromagnetic fields, then a device that measures such fields would be useful. If ghosts were known to cause temperature drops, then

a sensitive thermometer would be useful. If ghosts were known to emit ions, then a device that measures such ions would be useful.

The problem is that there is no body of research showing that anything these devices measure has anything to do with ghosts. Until someone can reliably demonstrate that ghosts have certain measurable characteristics, devices that measure those characteristics are irrelevant.

Ineffectively using recording devices

EMF detectors, ion counters, and other gear have no use in ghost investigations. Ordinary cameras and audio recorders, however, can be helpful if used correctly. Unfortunately, many ghost hunters don't know how to use such equipment effectively.

One common example is the use of voice recorders. Most ghost hunters, including the T.A.P.S. team, use handheld voice recorders in an attempt to capture a ghost voice or EVP. Often the ghost hunter addresses the supposed spirit while holding the recorder and either standing in the middle of a room or walking around. Sometimes a voice-like sound or noise will be heard at the time; if so, the ghost hunter(s) will ask more questions, or the sound or EVP will be saved for later analysis.

Unfortunately, this is an ineffective protocol. To identify the nature of the sound (human, ghost, cat, furnace, etc.), an investigator must first determine its source, which in turn involves locating the sound's origin; this can be very difficult for a ghost hunter to do, especially in a darkened room. If the sound came from an open window, that suggests one explanation. If the sound's origin can be traced to the middle of an empty room, that might be more mysterious. Locating the source of a sound is nearly impossible using only one recording device.

A better way to scientifically determine the source location of a sound is with more than one microphone—at least three, and the more there are the better. By placing sensitive microphones throughout the location (and certainly in the four corners of a room),

the signal strength of the sound can be measured at each microphone. Along with a basic knowledge of acoustics and math, these readings allow the investigator to triangulate within a few feet where the sound came from. Ideally this work should be done in real time so that ghost hunters can immediately investigate the cause; finding some “anomaly” while reviewing evidence days or weeks later is pointless.

5. Focusing on the history of a haunted location instead of the specific phenomena reported at it.

Ghost hunters often spend considerable time and effort researching the history of a house or building by scouring local records and newspapers to determine when the place was built, who built it, and who may have lived or died there or by looking for stories, legends, tragedies, lists of past owners, and so on. This is a staple of *Ghost Hunters* investigations, which often begin with the T.A.P.S. crew and the TV audience listening to (real or fictional) stories about the history of the place.

Why it's a mistake: Although a supposedly haunted location might have a fascinating history, this almost always has little or nothing to do with the current haunting claims or phenomena. If a ghostly figure is reported in a stairwell, a spooky face is photographed in a bedroom, or a mysterious noise is reported coming from the attic, knowing who built the place in 1928 (or the name of the little girl who died in a fire there fifty years ago) is completely irrelevant. It has nothing to do with the face or noises, which must be investigated completely independently of this information. Sometimes ghost hunters will hear or record what they believe is the sound of a voice and assume it must be a ghost, then get so wrapped up in researching the house's history trying to “identify” the ghost that they neglect to fully investigate the source of the sound.

6. Conducting a stakeout or “lockdown.”

A stakeout is typically an overnight “investigation” into a haunted location, usually with a half dozen or more people

wandering around the premises, setting up cameras, taking readings, and so forth. All ghost-themed TV shows feature this activity, which is standard procedure for most ghost-hunting groups. It's also a sure sign of pseudoscience and amateur investigation.

Why it's a mistake: As an investigative *modus operandi* in ghost hunting, the stakeout (or “lockdown,” as it's sometimes melodramatically called) has a 100 percent track record of failure; of the hundreds of stakeouts conducted by ghost hunters, not a single one has yielded any significant evidence of ghosts. (As I previously noted, they might have better success if they left the lights on.) A stakeout is essentially a scientific experiment without the science. Real experiments are carefully controlled by the investigator: he or she controls some variables or conditions and measures the variation. Ghost hunters seem to think that by controlling access to the property in question, they are reducing or eliminating any false evidence of ghosts.

However, in a stakeout the ghost hunter cannot control all, or even most, of the variables and conditions in the experiment he's conducting. It's important to remember that nearly anything that anyone thinks is odd for any reason can be offered as evidence of a ghost. There is an impossibly broad spectrum of phenomena that have been claimed as signs of ghosts, including lights, shadows, noises, silence, heat, cold, moving objects, smells, uneasiness, and so on. If the presence of a ghost could be narrowed down to a specific phenomenon—for example, if everyone agreed (or it had been somehow proven) that ghosts give off red light or a certain high-pitched sound—then the problem of not having a controlled location would be greatly reduced. An investigator wouldn't need to rule out every possible source of sound, smell, light, etc., but instead would need to rule out merely any sources of red light or high-pitched sounds. But because just about any phenomenon can be attributed to ghosts, there is no way to rule out or control for the conditions. A ghost

stakeout or lockdown is a completely unscientific waste of time.

Ultimately, of course, whether ghost hunters choose to use scientific methods and strategies is up to them. I personally don't care either way; it's not my time, effort, and money that's being wasted by doing fundamentally flawed investigation. But over the years I have gotten results and solved many cases using scientific techniques.

If ghost hunters don't care about performing scientifically valid investigations and are happy with the level of evidence they are getting, they are welcome to ignore this information. But they can't complain that no one offered a science-based paradigm for paranormal investigation. I believe that if ghosts exist, they are important and deserve to be taken seriously. Most of the efforts to investigate ghosts so far have been badly flawed and unscientific—and, not surprisingly, fruitless. If investigation is to be done, it should be done right. ■

Notes

1. Ironically, Hawes and Wilson formed T.A.P.S. because they were dissatisfied with the lack of good investigation methods they saw among ghost hunters. According to Jason Hawes, “Finally I said, ‘Screw the rest of what's out there,’ referring to other ghost hunters and their methods. ‘Let's do it our own way’” (Hawes and Wilson 2007, 5).

2. There are far too many mistakes in the typical ghost investigation to discuss them in any depth here. A fuller discussion can be found in chapter 4 of my new book, *Scientific Paranormal Investigation*.

References

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