

Ghost Hunting in America: a skeptical look

From Ghoulies and Ghosties
And Long Leggety Beasties
And things that go bump in the night
Good Lord, deliver us!ⁱ

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A Gallup poll taken in June 2005 found that 37% of Americans believed in haunted houses, 32% believed in ghosts.ⁱⁱ There are at least a half a dozen currently running television shows that deal with ghosts: such as *Ghost Adventures*, *Ghost Hunters*, *Ghost Whisperer*, *A Haunting*, *Medium*, *Most Haunted*, and *Paranormal State*. Virtually every state and every city of any size has its own Ghost Hunters Society. The Facebook group “Do you believe in Ghosts” has over 5,000 members. There is even a Gay Ghost Hunters, USA Yahoo Group.ⁱⁱⁱ What can account for this explosion in interest in ghosts? And even more curious, why are so many ordinary people now out there looking for them? In this paper I will explore the phenomenon of ghost hunting in America: its history, its methodology, tools of the trade, and pitfalls, in an attempt to answer these questions.

Ghost stories have been around for a long time—perhaps since the beginnings of our human race. Who knows what tales of disembodied entities were told by Paleolithic man as he huddled nervously around his fire, as the darkness licked at the edges of the light and the wind howled. We see ghosts in the four-thousand-year-old

Epic of Gilgamesh, where Gilgamesh encounters the shade of his dear friend Enkidu. In the *Odyssey* of Homer and in Vergil's *Aeneid*, ghosts deliver messages of import to the living, and in the Bible, the witch of Endor summons the shade of Samuel at King Saul's bequest.^{iv}

The earliest known haunted-house story, dated to the mid-first century B.C.E, is related by Pliny the Younger, writing about a hundred years afterwards. Pliny tells of a house in Athens that lay vacant for some time, its owners fled in terror because of an apparition described as “an old man, of extremely emaciated and squalid appearance, with a long beard and disheveled, hair, rattling the chains on his feet and hands.”^v The Stoic philosopher Athenodorus, coming into town and noticing the “for sale or rent” sign, enquired why such a fine large house was so cheap. All was explained. Athenodorus, who held little truck with such matters, snapped it up at the sale price. The first night in the house he dismissed his slaves and took a torch and his writing materials to the front of the house. Soon he heard the clanking of chains. Undeterred, he continued his philosophical endeavors. Then he saw it. It beckoned towards him. Athenodorus shook his head no. It was not until the ghost rattled the chains directly over the philosopher's head that he reluctantly followed the specter. As it slowly exited the house, Athenodorus followed, and carefully noted the place where the ghost disappeared into the ground. Marking the spot, he returned to the house and slept the calm sleep evidently given to stalwart philosophers. In the morning he fetched the local magistrate, who had the area dug up. On the exact spot where the ghost was

seen to have entered the ground, they found a skeleton in chains. After the remains were given a proper burial, the specter was never seen again.

The Ancient Greeks believed that without a proper burial, the soul was doomed to wander the earth, unable to cross the river Styx and reach the Underworld. So the story makes perfect sense for that culture.

According to Ronald C. Finucane, in his *Appearances of the Dead: A Cultural History of Ghosts* (1984, 223):

Each epoch has perceived its specters according to specific sets of expectations; as these change so too do the specters. From this point of view it is clear that the suffering souls of purgatory in the days of Aquinas, the shades of a murdered mistress in Charles II's era, and the silent grey ladies of Victoria's reign represent not beings of that other world, but of this.

To examine how our modern epoch perceives the supernatural it is necessary to travel back to New York State in the mid-19th century. Spiritualism in the United States is usually seen to have its inception in Hydesville, a small town southwest of Rochester. There, in the spring of 1848, the Fox family: John, his wife Margeret, and their two young daughters Margaret and Katherine, began to hear strange knocking sounds.^{vi} Evidently coming from the two girls' bedroom, the knockings continued unabatedly until finally one night, Katherine boldly addressed the knocker: "Mr. Splitfoot," she cried (using a common nickname for the devil), "Do as I do," and clapped her hands once. A single knock rang out. She clapped her hands twice. Two knocks. Soon the girls worked out a system of communication: two knocks for yes, none for no. They thus determined that the entity was a murdered peddler. Word

quickly of the two girls' talent for talking with the dead, and soon they were giving readings for a fee,^{vii} managed by their much older sister Leah, who was a widow living in Auburn. At one point they hired out the brand-new Corinthian Hall, the largest venue in Rochester, with a capacity of 1100-1200 persons, with a ticket price of twenty-five cents, fifty cents for a gentleman and two ladies.^{viii} Among those who attended a performance of the rapping Fox sisters were Horace Greeley, the editor of the New York Tribune, William Cullen Bryant, the editor of the New York Evening Post, George Bancroft, the former secretary of the Navy, the authors Harriet Beecher Stowe and James Fenimore Cooper, and even Mary Todd Lincoln.^{ix} Others quickly followed suit, and soon one could consult "mediums" (the name for one who acts as a medium between the living and the dead) to ask questions, take part in table tiltings, and even witness ectoplasmic phenomena: the actual materialization of a white substance that issued from the bodily orifices of a medium.^x Although the Fox sisters later recanted their story decades later, revealing that they had created the mysterious onstage rappings by cracking the joints in their toes, by then it was too late.^{xi} In the second half of the nineteenth century, interest in contacting the dead flourished in the United States and spread to Great Britain and Europe. Influenced by the Fox sisters and others such as Emanuel Swedenborg and Franz Mesmer, the American Spiritualism Movement gained strength. Dozens of Spiritualist periodicals were published world-wide, including three weekly journals in the United States: *The Banner of Light* (Boston), *The Religio-Philosophical Journal* (Chicago) and *Mind over Matter*

(Philadelphia).^{xii} In 1893, the National Spiritualist Association of Churches was formed in Chicago. Its main principles were to affirm that the soul of an individual survives after death and that communication with the dead is a scientifically proven fact.^{xiii}

As the interest in spirits, mediums and séances continued, so did the growing concern to monitor these occurrences and verify them, if possible, using the scientific methods of the day. It is at this time that we can first speak about ghosthunting as a specific and organized endeavor, with the creation of a number of organizations dedicated to investigating and recording paranormal or supernatural events. The first of these organizations was the Cambridge Ghost Club, begun in 1851 by Edward White Benson, later Archbishop of Canterbury, and the classicist Henry Sidgwick. This later morphed into the Society for Psychical Research, perhaps the most influential parapsychological investigative organization ever formed. As its website proclaims, “The SPR was the first organisation established to examine allegedly paranormal phenomena using scientific principles. Our aim is to learn more about events and abilities commonly described as ‘psychic’ or ‘paranormal’ by supporting research, sharing information and encouraging debate.”^{xiv} The Society, founded in 1882, set down clear guidelines for methodology and in 1886 published the monumental *Phantasms of the Living*, written by Edmund Gurney, Frederic Myers and Frank Podmore. The work contained over seven hundred reports of “phantoms and ghostly voices, premonitions and warnings, dreams, flickers of communication

between the living and the dead.”^{xv} Its impact was immediate and definitive: to quote Alan Gauld, “Since Gurney’s time every serious discussion of ... apparitions has taken its start from his classification and arrangement of them. To pass from even the ablest of previous works to *Phantasms of the Living* is like passing from a mediaeval bestiary or herbal to Linnaeus’ *Systema Naturae*.”^{xvi} In 1885, three years after the founding of the SPR, a sister organization was created in the United States, by the psychologist William James, brother of the novelist Henry James and author of *The Varieties of Religious Experience*. The American Society for Psychical Research investigated medium after medium, and disappointingly found most of them to be rank cheats. Occasionally they encountered a medium whose impressive results could not be explained, such as Leonora Piper, a housewife with apparently telepathic skills.^{xvii} Even she, however, had an ultimately disappointing track record. In 1909, after over two decades of research, William James expressed his frustration in a work entitled, “The Confidences of a Psychical Researcher”:

For twenty-five years I have been in touch with the literature of psychical research, and have had acquaintance with numerous “researchers.” I have also spent a good many hours (though far fewer than I ought to have spent) in witnessing (or trying to witness) phenomena. Yet I am theoretically no “further” than I was at the beginning; and I confess that at times I have been tempted to believe that the Creator has eternally intended this department of nature to remain *baffling*, to prompt our curiosities and hopes and suspicions all in equal measure, so that, although ghosts and clairvoyances, and raps and messages from spirits, are always seeming to exist and can never be fully explained away, they also can never be susceptible of full corroboration.^{xviii}

James died the following year. The American Society for Psychical Research continues to this day, and its Journal and Proceedings are still published. Other organizations were created in the following decades: the Duke Parapsychology Laboratory, (later the Rhine Research Center) in 1935, the Parapsychology Foundation in 1951,^{xix} the Parapsychological Association in 1957.^{xx} For the most part, investigation of the paranormal tended to remain ensconced in academia. But this was about to change. In the 1970s, parapsychological societies began to proliferate with more liberal attitudes towards the paranormal. One such group was the Ghost Tracker's Club. Founded in Chicago in 1977 by Martin V. Riccardo (who incidentally also founded the Vampire Studies Society in the same year), it changed its name to the Ghost Research Society in 1981. In 1976, the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) was formed. Its founder, Paul Kurz, explained the reason behind CSICOP's creation:

I was dismayed in 1976 by the rising tide of belief in the paranormal and the lack of adequate scientific examinations of these claims. At that time a wide range of claims were everywhere present. Books such as Erich von Däniken's *Chariots of the Gods?*, Immanuel Velikovsky's *Worlds in Collision*, and Charles Berlitz's *The Bermuda Triangle* were widely popular; and self-proclaimed gurus and soothsayers were stalking the media—from Uri Geller to Jeane Dixon. I was distressed that my students confused astrology with astronomy, accepted pyramid power, Bigfoot, the Loch Ness monster, Kirlian photography, and psychic surgery without the benefit of a scientific critique.^{xxi}

Interest in ghost investigation may have also been inspired by the 1984 film *Ghostbusters*, in which three parapsychologists are fired from their cushy Columbia jobs and forced to take up investigation and removal of free floating, full torso,

vaporous apparitions and other types of ghosts with their Proton Packs: “a reportedly unlicensed nuclear accelerator which fires a proton stream that polarizes with the negatively charged energy of a ghost allowing it to be held in the stream while active.”^{xxii}

So what is a ghost? The standard definition usually refers to the visual appearance of a disembodied spirit or soul of a deceased person, without substance, and usually either partially transparent or totally invisible. Frederick Myers, one of the founders of the Society for Psychical Research, defined ghosts as “manifestations of persistent personal energy, or an indication that some kind of force is being exercised after death” connected with a once living person.^{xxiii} Can one quantify this force? In a famous series of experiments conducted in Dorchester, Massachusetts beginning in 1901, Dr. Duncan MacDougall placed six dying tuberculosis patients in turn on a cot placed on a Fairbanks platform scale to examine what happened to the weight of a human at the precise moment of death. MacDougall reported that at the point of death of the first patient, there was an attendant weight loss of $\frac{3}{4}$ of an ounce, or 21 grams. In the other five patients, problems with detecting the exact moment of death and inconsistencies with the scales rendered the results inconclusive. Unable to continue his work with humans, MacDougall later repeated the experiment with dogs (who were helped along in the process). No such similar weight loss was detected, thus bringing MacDougall to the conclusion that dogs do not have souls.^{xxiv} (Evidently

he did not see the film, *All Dogs Go to Heaven*.) Nonetheless, the idea of the weight of a human soul being 21 grams entered into the public imagination and stuck there.

If a soul has weight, does it then have matter? According to ghost hunter Joshua P. Warren, ghosts are “nonphysical entities... not being restricted to the known laws of physical matter.”^{xxv} How then is a ghost able to walk up a flight of stairs in apparent violation of Newton’s First Law of Motion?^{xxvi} If it is able to move through walls and doors, how is it that its footsteps create sounds? If it does not have matter, how can it move objects? How would a being composed solely of energy be able to remain in a moving car? If ghosts are able to fully materialize and therefore do have matter, are they then unable to glide through walls and doors? Are they then subject to the laws of gravity? How can a ghost speak without a voicebox? Why do ghosts wear clothes? One ghost hunter explains that it is either because the ghost imagines itself clothed, and thus manifests in that fashion, or wishes to appear to us in a form in which it can be recognized, and thus appears clothed.

If one examines the alleged evidence for the existence of ghosts, we can see that it falls into two main categories: eyewitness testimonies and abnormalities recorded by cameras, audiorecording devices, and other types of data collecting devices. Many initial sightings of ghosts occur at night, when the viewer is either just falling asleep, or just waking up. These borderline states, called “hypagogic states” are precisely when the subject is least likely to be able to formulate a clear and cogent analysis of his surroundings—and the thumps or knocks often reported may be

nothing more than the jerks of the body as it settles in or jerks out of sleep.^{xxvii} The term was coined by the French polymath Louis Ferdinand Alfred Maury, in an article entitled “Hypnagogic hallucinations, or mistakes of the senses while in the intermediate state between wakefulness and sleep,” although their existence has been acknowledged as far back as the fourth-century Greek writer Aristotle, in his work entitled “On Dreams.^{xxviii}” What may only be a random arrangement of tree branches becomes a human figure—or an irregular shadow on a dimly lit wall becomes the face of a wizened old woman. *Pareidolia*—the human mind’s tendency to look for significant patterns in seemingly random stimuli has been responsible for such phenomena as the man in the moon, the so-called Face on Mars, and the infamous Mother Teresa in the cinnamon bun. Humans are pattern-seeking animals, and as Carl Sagan notes, we seem to be hard-wired to see human faces as a survival technique.^{xxix} In addition to visual hallucinations, subjects may also experience auditory hallucinations, olfactory, and even gustatory hallucinations.^{xxx}

In the case of auditory hallucinations, the same principle of *pareidolia* can be applied so that random sound patterns—even white noise—can be interpreted to create meaningful speech or sounds. Anyone who has ever been in the shower and sworn that she heard the doorbell has experienced this effect. In fact, it is a useful adaptation that allows us to “fill in the gaps” when communicating, so that a dropped word or two in conversation can be readily supplied. Some investigators, however, claim that ghostly communications cannot be heard with the unaided human ear, but can be

later discovered when a recording of the investigation is reviewed. This is the basis behind EVP: electronic voice phenomena, where random sounds recorded on tape, or heard in white noise, are perceived as the voices of the spirits of the dead attempting to communicate with the living. In the 1920s, when asked about the possibility of contacting the spirits of the dead, Thomas Edison replied that

“it is possible to construct an apparatus which will be so delicate that if there are personalities in another existence or sphere who wish to get in touch with us in this existence or sphere, this apparatus will at least give them a better opportunity to express themselves than the tilting tables and raps and ouija boards and mediums and the other crude methods now purported to be the only means of communication.”^{xxxix}

More likely causes include breakthrough radio and television signals, bleed-through from other humans conversing in the area, even walkie-talkie communications and cell-phone traffic, transmitted through something called the ducting effect: irregularities in the layers of the ionosphere that create small temporary conduits or ducts that allow these transmissions to travel thousands of miles.^{xxxii} A gap between two pieces of metal or between a piece of metal and the ground can also foster a semi-conductivity effect. Many of you may recall the classic *Partridge Family* episode where Susan Dey’s character started hearing the Rolling Stones in her mouth—it turns out that her fillings were picking up a radio transmission. One can imagine the consternation such events might cause, as in the case of an East German woman whose oven began speaking to her in English. Upon investigation, it was found that a nearby Voice of America transmission was to blame.^{xxxiii}

Cold spots are one of the most common phenomena reported in investigations of haunted houses. Joshua P. Warren, in his work entitled *How to Hunt Ghosts: A Practical Guide*, explains that “when a ghost tries to materialize, it draws energy from the environment. Heat is a form of energy. Cold spots can be caused by spirits who take in the heat energy around them but fall short of enough to appear. There is no solid evidence for why else the presence of a spirit should cause such a drop in the external temperature. However, such phenomena are commonly reported by ghost hunters”^{xxxiv} One notes the circular reasoning and leaps of logic here: there is a drop in temperature. It must be caused by a ghost sucking up energy. How else can a drop in temperature connected with a ghost be explained? Hmmm. Drafts? Cold sinks? Human misperception? Imagination?

In his book Warren includes the following equipment as essential for the ghost hunter’s bag: Notebook and writing utensil, flashlight, batteries, watch, compass, first aid kit, beverage and snack. But the 21st century ghost hunter must not stop there. Any Casper-chaser worth his ectoplasm knows that in addition he must also have a Electromagnetic Field Meter, Infrared Meter, Electronic Voice Phenomena Recorder, Night-vision Scope, Audio Enhancer, Electrostatic Generator, Tone Generator, Dowsing Rod and Strobe Light.^{xxxv} I think we’re going to need a bigger bag.

One of the most misused of these is the electromagnetic field (or EMF) meter. As one might expect, the EMF meter is a scientific instrument for measuring electromagnetic radiation. Its application in ghost hunting is difficult to explain, as no

one has ever yet been able to prove that EMF meters can detect ghosts,^{xxxvi} or that fluctuations in electromagnetic fields are connected to anything other than normal phenomena such as “faulty electric wiring, inadvertently magnetized objects (such as a metal bed frame), radio waves, microwave emissions, solar activity, electrical thunderstorms, and many other influences—even the human body!” Nonetheless, the connection is perhaps easier to understand for those of us for whom electricity calls to mind Arthur C. Clarke’s Third Law stating “Any sufficiently advanced technology is indistinguishable from magic.” In fact, studies conducted by Dr. Michael Persinger at the Consciousness Research Lab at Laurentian University in Sudbury Ontario show that certain types of electromagnetic field activity may cause the brain to be more susceptible to hallucinations. In other words, abnormal fluctuations in EMF activity are not an indication of ghosts, ghosts are an indication of abnormal fluctuations in EMF activity. In 1988, Persinger compared thirty-seven years of reports of hauntings with geo-magnetic activity for that period and found significant correlation.^{xxxvii} Two scientists at the University of Iowa were able to confirm a link between fluctuations in solar wind (which influence geo-magnetic activity on earth) and frequency of hallucinations reported in Society for Psychical Research records. Persinger then went on to see if he could synthetically generate a haunting by exposing people to laboratory-generated EMF. He found that exposure to milli-second-long pulses of EMF lowered levels of melatonin in the body, and that lowered melatonin levels are linked to tiny seizures in the right temporal lobe that can trigger feelings of fear and

hallucinations. Although Perisinger's research, published in 2002 in the *Journal of Nervous and Mental Disease*, has yet to be replicated,^{xxxviii} nonetheless, this may offer an alternative to calling in Peter Venkman and the other Ghostbusters: move your alarm clock further away from your bed, get rid of your cell phone, and take your melatonin supplements.

Another commonly touted "proof" of ghostly presence are so-called "orbs": small round objects that are commonly thought to represent spirit energy.^{xxxix} These are normally not witnessed on site, but tend to show up later in photographs taken at the scene. Some ghost hunters claim that these orbs are the first stage in the manifestation of a ghost, perhaps somewhat like the soap-bubble orb that presaged the coming of the Good Witch of the North in the *Wizard of Oz*. Most of these orbs tend to occur in photos taken with digital cameras. In fact, the phenomenon is so widespread with digital cameras that Canon and other camera companies address these problems on their websites and form letters. There are two main factors that contribute to the formation of orbs, neither of them supernatural in the slightest. First, digital cameras have a greater depth of field compared to 35mm cameras, due to their smaller focal distance. Second, when the flash is used, its light bounces off particles of dust and water droplets, showing up as small orbs. In addition, the use of digital cameras has changed the way we take photos: now we don't worry about "wasting film" or the cost of development, so many more photos are taken, increasing the odds of finding

photos with orbs. Since many supposedly haunted sights are old or abandoned buildings, it is not surprising that dust is a constant culprit.^{x1}

One ghost-hunting group that has received an enormous amount of attention in the last couple of years, mainly due to their reality television series *Ghost Hunters* on the Sci-Fi channel, is the The Atlantic Paranormal Society, or TAPS for short. TAPS, consisting of two plumbers, Jason Hawes and Grant Wilson, and their team, has been investigating paranormal activity since its inception as the Rhode Island Paranormal Society in 1990. They proudly insist on their website that “We are not amateurs” and yet watching them in action on their television show would make one wonder otherwise. Most of the show appears to center on sequences in which the audience watches them react to some off-camera noise or sight with alarm, shock or incredulity, exclaiming that it’s impossible, there was no one there, then slowly building up to the actual screening of the event. By then, the television audience is primed for something really big. Unfortunately, this is rarely delivered. But by then the damage is done and the viewer, having invested an hour of her life in watching the show, feels there must be *something* to it. Yes, but it is clearly more *Fi* than *Sci*.

In fact, virtually all of the “evidence” collected by ghost hunters is evaluated according to the principles of the logical fallacy known as “arguing from ignorance”: we don’t know what caused the cold spot or the electromagnetic fluctuation or the slamming of the door, therefore it *must* be a ghost. For example, although concluding that some 90-98 percent of all cases of purported hauntings can be proven to have a

natural explanation, “the majority of the [Ghost Research Society] members remain convinced that the 10 or so percent of unexplained phenomena is enough to conclude that ghosts do exist and there is life after death.”^{xli} But as one noted skeptic, Benjamin Redford, puts it,^{xlii}

The evidence for ghosts is no better today than it was a year ago, a decade ago, or a century ago. Ultimately, ghost hunting is not about the evidence (if it was, the search would have been abandoned long ago). Instead, it’s about having fun with friends, telling ghost stories, and the enjoyment of pretending you are searching the edge of the unknown. (It’s also about making money selling Ghost Hunters T-shirts, books, and videos.) Ghost hunters may be spinning their wheels, but at least they are enjoying the ride.

To sum up, the current increase in interest in ghosts and ghost hunting can best be explained by three factors: the first is the explosion in electronic communication in the late twentieth/early twenty-first century: with social networking such as e-mail, list-servs, You Tube and newsgroups, those isolated individuals espousing fringe views on the supernatural once held to be unsupportable in real, concrete communities, have found support and like-minded colleagues in cyber-communities on the Internet. In other words, the crank says “I’m not alone; my views are validated. If so many people believe as I do, I must be right!” Second, the availability of relatively inexpensive electronic gadgets, and the high societal approval given to those who possess such toys, encourage the “Everyman ghost-hunter” as epitomized by TAPS to outfitted himself in style, if not substance. Finally, the current backlash against intellectualism and skepticism, combined with much easier access to often dubious wiki-information, has created a world of the instant expert, unbound by the

rules and strictures of formal training and education. If two plumbers can do it, why can't I?

How do we fight against the prevailing tide of pseudo-scientific incoherency as epitomized in this latest ghost-hunting craze? Paul Kurz, founder of SCICOP, comments:

Given the massive cultural fixation on the spiritual-paranormal outlook, perhaps the most that skeptical inquirers can hope for is that we can lessen the excessive follies of its proponents. Perhaps our most effective course is to moderate untested overbeliefs and encourage critical thinking as far as we can. Our agenda should be to encourage the extension of critical thinking to all areas of life-including religion, politics, ethics, and society.”^{xliii}

How do we do this? Well, first off, we need to make sure that the batteries in our BS meters are at full charge. We need scientists and critical thinkers who are willing to educate in a broad, comprehensible fashion, across disciplines. We need to fight the specters of post-modernist relativism that have eroded the value of objectivity in the sciences and other disciplines. We need to teach our children that skepticism is a good thing, that skeptics are not cranks or anti-social grumps. We need to teach them not to believe everything they read on the Web or see on T.V. Above all, we need to support the teaching of math and science and critical thinking, and do it at an early age.

In the words of William James:

“Falsus in uno, falsus in omnibus, once a cheat, always a cheat, such has been the motto of the English psychical researchers in dealing with mediums. I am disposed to think

that, as a matter of policy, it has been wise. Tactically it is far better to believe much too little than a little too much.”^{xliv}

ⁱ A passage from the Cornish or West Coast Litany as quoted in *The Yale Book of Quotations*, edited by Fred R. Shapiro and Joseph Epstein (Yale Univ. Press, 2006), 20.

ⁱⁱ Gallup poll at <http://www.gallup.com/poll/17275/OneThird-Americans-Believe-Dearly-May-Departed.aspx?version=print>, accessed 1/29/09.

ⁱⁱⁱ http://groups.yahoo.com/group/Gay_Ghost_Hunters_USA_1/summary, accessed 5 Feb 2009.

^{iv} 1 Sam. 28:7–20.

^v Pliny the Younger, *Letter 83* translated by William Melmoth in Charles William Eliot, John. Dryden, eds., *Harvard Classics* vol. 9 (Collier, 1909), 327.

^{vi} My account closely follows that of Deborah Blum, *Ghost Hunters: William James and the Search for Scientific Proof of the Afterlife*, (Penguin, 2006) 16-18.

^{vii} Reported to be a dollar a reading for public readings, five dollars for private readings.

^{viii} Barbara Weisberg, *Talking to the Dead: Kate and Maggie Fox and the Rise of Spiritualism* (HarperCollins, 2005), 77.

^{ix} David S. Reynolds, *Walt Whitman's America: A Cultural Biography* (Vintage Books, 1995), 263, Weisberg, 110.

^x On ectoplasm, see James Randi, <http://www.randi.org/encyclopedia/ectoplasm.html>, accessed 8 Feb 2009.

^{xi} The original rapping in Hydesville was also explained: “When we went to bed at night we used to tie an apple to a string and move the string up and down, causing the apple to bump on the floor, or we would drop the apple on the floor, making a strange noise every time it would rebound.” Quoted in Harry Houdini, *A Magician Among the Spirits* (Harper, 1924), 5.

^{xii} W.H. Harrison, *Psychic Facts, a Selection from Various Authors*. (Ballantyne Press, 1880), 5-6.

^{xiii} National Spiritualist Association of Churches, Declaration of Principles, <http://www.nsac.org/principles.htm>, accessed January 30, 2009.

^{xiv} The website for the Society for Psychical Research at <http://www.spr.ac.uk/expcms/>, accessed 1 Feb 2009.

^{xv} Blum, 108.

^{xvi} Alan Gauld, *The Founders of Psychical Research* (Routledge & Kegan Paul, 1968), 164.

^{xvii} Blum, *passim*.

^{xviii} William James, *Writings, 1902-1910* (Library of America, 1987), 1250.

^{xix} From their website: “The Parapsychology Foundation is a not-for-profit foundation which provides a worldwide forum supporting the scientific investigation of psychic phenomena. The Foundation gives grants, publishes pamphlets, monographs, conference proceedings and the *International Journal of Parapsychology*” (<http://www.parapsychology.org/dynamic/010000.html>, accessed 5 Feb 2009).

^{xx} A private international nonprofit organization devoted to “promoting scholarship and scientific inquiry into currently unexplained aspects of human experience.” (http://www.parapsych.org/mission_statement.html, accessed 6 Feb 2009)

^{xxi} Paul Kurz, “A Quarter Century of Skeptical Inquiry: My Personal Involvement,” *Skeptical Inquirer magazine*, July/August 2001, accessed online 6 Feb 2009 at <http://www.csicop.org/si/2001-07/kurtz.html>.

^{xxii} Quoted from [http://en.wikipedia.org/wiki/Ghostbusters_\(franchise\)#Ghost_capture](http://en.wikipedia.org/wiki/Ghostbusters_(franchise)#Ghost_capture).

^{xxiii} “On Recognized Apparitions Occurring More Than a Year After Death,” *Proceedings of the Society for Psychical Research*, (Society for Psychical Research, 1890), 15.

^{xxiv} Mary Roach, *Spook: Science Tackles the Afterlife* (Norton, 2005) 80-91.

^{xxv} Joshua P. Warren, *How to Hunt Ghosts* (Simon and Schuster, 2003), 49.

^{xxvi} See C. J. Efthimiou, S. Gandhi, “Cinema Fiction vs. Physics Reality,” *Skeptical Inquirer*, Volume 31, Number 4 (July/August 2007).

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- ^{xxvii} Louis Ferdinand Alfred Maury, “Des hallucinations hypnagogiques, ou des erreurs des sens dans l’état intermédiaire entre la veille et le sommeil.” *Annales Medico-Psychologiques du système nerveux*, 11 (1848), 26-40. Technically, *hypnagogia* refers specifically to the transitional state between wakefulness and sleep, and the term *hypnopompia* is used to refer to the state between sleep and wakefulness.
- ^{xxviii} Andreas Mavromatis, *Hypnagogia: The Unique State of Consciousness Between Wakefulness and Sleep*. (Routledge, 1987) p.3
- ^{xxix} Carl Sagan, *The Demon-Haunted World: Science as a Candle in the Dark* (Random House, 1995), 45.
- ^{xxx} Mavromatis, 35.
- ^{xxxi} Ronald W. Clark, *Edison - The Man Who Made the Future* (Putnam, 1977), 235, cited in Robert Carroll, *The Skeptic’s Dictionary: A Collection of Strange Beliefs, Amusing Deceptions, and Dangerous Delusions* (Wiley and Sons, 2003), 119.
- ^{xxxii} Roach, *Spook* 188.
- ^{xxxiii} Roach, *Spook* 189.
- ^{xxxiv} Warren, *How to Hunt Ghosts*, 172.
- ^{xxxv} Warren, *How to Hunt Ghosts*, 138-139.
- ^{xxxvi} Joe Nickell, “Ghost Hunters,” *Skeptical Inquirer* (September 2006), accessed on line 2 Feb 2009 at <http://www.csicop.org/si/2006-05/i-files.html>.
- ^{xxxvii} Roach, *Spook* 216.
- ^{xxxviii} Roach, *Spook* 220.
- ^{xxxix} Joe Nickell, “Ghost Hunters.”
- ^{xl} See “Orbs-the Skeptical Approach” at <http://www.paullee.com/ghosts/orbs.html>, accessed 5 Feb 2009.
- ^{xli} Theresa Cheung, *The Element Encyclopedia of Ghosts and Hauntings* (Barnes and Noble, 2006), 183.
- ^{xlii} Joe Nickell, “Ghost Hunters.”
- ^{xliii} Kurz, “A Quarter Century of Skeptical Inquiry.”
- ^{xliv} James, *Writings, 1902-1910*, 1252.