Paranormal Research & The Scientific Method

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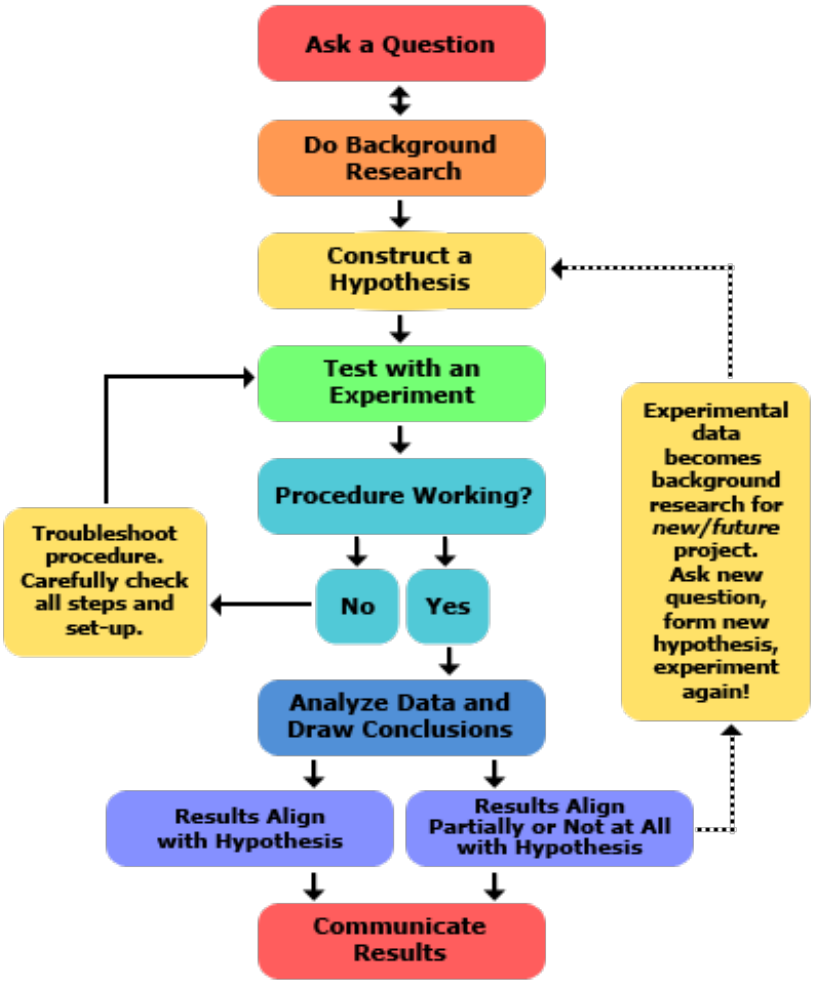


In the world of paranormal research there is an ongoing debate as to the validity of this subject within the realm of true scientific study. Many claim this to be a pseudo-science, some claim that it can't be studied using science and others think it's just plain outright hokum. Well as a person who has studied this alleged "pseudo-non-scientific hokum" for nearly a decade I can tell you there is a lot more to the story than the opponents of this field (yes field) take into consideration. I have found that anyone who makes use the above mentioned terms very often doesn't understand what science really is. I will be the first to agree that there are a lot of pseudo-scientific approaches being taken in this field today. Far too many in fact. There are people racing to conclusions, making assumptions, failing to research principles, manipulating and just outright lying to support their claims. They do this under the guise of self-proclaimed gifts/expertise, personal experiences and photographic, video and audible evidence that has absolutely zero scientific support.

However, this doesn't mean that real scientific research in this field is not be conducted. The people doing the poorest job tend to have the better press and so most often, the public perception of this field is represented by people who quite frankly have no idea what they are doing. The claim that this research in general is pseudo-scientific isn't new. Since science started researching this field back in the 1800's there have been accusations that the research just isn't viable. The battles between those for and against have carried on for more than 100 years. France has recently denounced the subject of paranormal in general as "Pseudo-scientific fraud" and will no longer

broadcast paranormal related programming. I must admit, the programming is junk. But that does not speak to the real research being done around the world.

In 2003 an in depth study was conducted by Marie-Catherine Mousseau (in Dublin, Ireland) to establish if paranormal research meets the criteria often said to characterize pseudo-science. She searched the planet to find evidence of paranormal study being conducted to the standards of the mainstream scientific community.

Her results:

"*I completed the analysis of written communication with an attempt to evaluate the peer-review process. I concluded that fringe journals practice peer review in the same general way as mainstream journals. Experience of the 45th convention of the PA was, again, no different from what is experienced at mainstream meetings; researchers questioned and criticized each other's work, albeit perhaps not to the same extent as at mainstream conferences. A less competitive and more friendly atmosphere could be partly explained by the unusually large range of subjects dealt with compared to the smallness of the community (the ninety-five attending people included psychologists, philosophers, historians, neuro-scientists, and physicists). Few researchers would be competent enough to argue in all these areas. On the other hand, this interdisciplinary atmosphere was intellectually very stimulating. To conclude, the contemptuous attitude of French scholars regarding research into the paranormal does not appear to be justified. This research fulfills most of the scientific methodological criteria that characterize "real" science. Communication among researchers in parapsychology reflects the essence of a scientific attitude: they constantly question their work, confront theories and facts, and seek critical comments from their peers.*"

The first thing to understand is that science is this: "The measurement and study of the physical elements pertaining to the natural world". It's essentially a system of knowledge that started out in the 17th century as more a philosophy than the strict method of research. Although many of the elements of scrutiny, analysis and evaluation founded in this philosophy are still in use today.

Let's look at the definition of Science a little closer. "The study of the physical elements pertaining to the natural world". First, everything is part of the natural world, no matter how bizarre it may be. Even man-made things are made from elements found naturally on this planet. We may mix things together to create derivatives but the pieces we use are from this Earth and subject to be studied and broken down by science.

If we have a paranormal experience, the elements that make up that experience are tangible to some degree. To see something it must reflect or emit light. To hear something it must move air molecules to produce sound. To move an object it must be able to produce a force etc. All of these things are measurable within the guidelines of proper science. Even if the experience were to be entirely psychological and contains none of the elements mentioned above, it is still able to be scientifically studied because our mind must perceive the event and process the experience and that is still worthy of true scientific study.

The process of this strict scientific study involves what is known as "The Scientific Method" which came into popular use in the 19th century. This method has been used for countless discoveries including cures for sickness, energy production and even the discovery and understanding of living organisms. It's truly transformed the world we live in and there is not a day that goes by that you don't encounter a product of the proper scientific method.

So how does one apply this to paranormal research? Glad you asked. There are 7 steps to the scientific method (shown on the chart above). I will explain each as best I can.

Ask a Question

Sounds pretty simple right? Well, there's a little more to consider than simply busting out with a question. The scientific method starts when you ask a question about something that you are able to observe: How, What, When, Who, Which, Why, or Where? This establishes a purpose to your research and helps keep your work properly

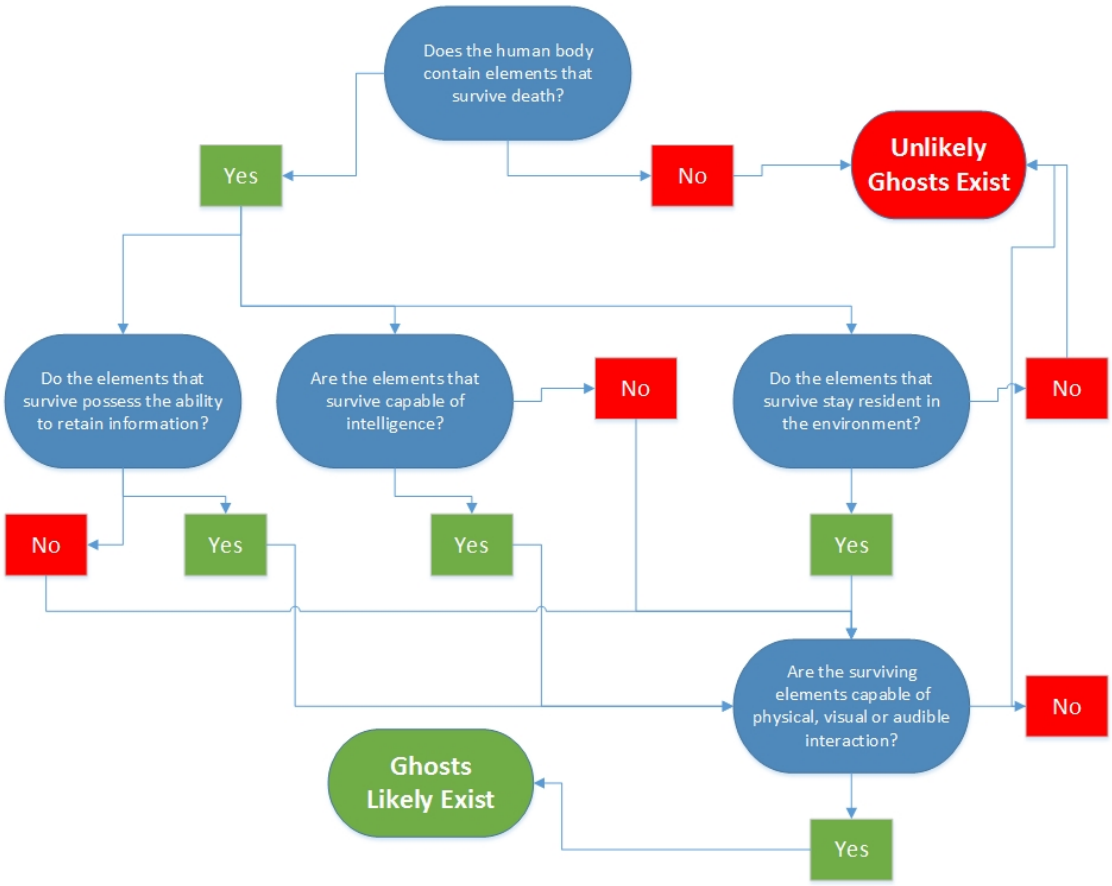
focused. While it's an exciting thought that the proper application of science may help answer your questions, it's important to understand that in order for this method to work your question must also be about something that you can measure, preferably with a number (such as temperature, electro-magnetic fields, ION counts, frequency, distance, weight etc.) The trick here is to be specific and try to keep the question as closed ended as possible (i.e. Yes or No). Doing this will help your results become more definitive and easier to process and a smoother process means better conclusions.

It's important to understand that the answers to the "big questions" such "why are we here?" are usually found after many tedious years of answering countless smaller (more specific) questions. For example, the question "Do Ghosts Exist?" is a fairly "big" question and while it may seem like a great fit here since it is a relatively specific question and closed ended, it does have some inherent problems. First, it uses the label "Ghost" which is, as of yet, undefined to a degree that it can be used in scientific research. Currently, the term "Ghost" means different things to different people. Some believe ghosts are the souls of deceased human beings, some believe they are beings from other dimensions, some believe they are residual energy, some believe they are aliens, some believe they are demons etc. You get the idea. Before we can define a label for a phenomena we must first have sufficient evidence that the phenomena exists at all and enough data to determine the smaller characteristics that represent its origin. The other problem with this question is that it requires a conclusive result to a non-specific chain of processes and that's just not how science works.

I will explain…

First, for demonstration purposes, let's assume that a "Ghost" is the soul of a deceased human. To muster scientific support for the question "Do Ghosts Exist?" will require preliminary answers to a very large and pre-existing subset of questions, which in turn will present and even larger subset questions of their own and all of those questions require will require experimental support before the "big" question can be answered. It's a very detailed, tedious process that can take literally years to complete.

Here is a VERY generic process of how it would work if we were to explore the question "Do Ghosts Exists?" (Assuming "Ghosts" are the product of deceased human souls of course):



The chart above this is just a very high overview of the complex path that would need to be taken in order determine if “Ghosts” (as a product of deceased humans) were likely to exist. Keep in mind that each of those blue areas in the chart above would also have many question subsets of their own that would need to be answered before a “Yes” or a “No” path could be determined. As you can see, answering the question “Do Ghosts Exist” is not as simple as simply taking a photo or video, recording audio or even having a personal experience (no matter how compelling it might be). For science to fully process the concept of Paranormal Activity, it needs be demonstrable and repeatable. Clearly getting a spirit to manifest on demand in order to be studied is not within the current realm of possibility. However, conducting demonstrable experimentation to help support the concept of paranormal activity is a good place to start. Following the process in the chart above will not conclusively prove that ‘Ghosts” exist, but it will strengthen the possibility and open a door to further scientific consideration.

Now that you have a general understanding of how (and why) questions are posed in scientific research, we can move on to the second element in the scientific method.

Background Research

For many, Background Research involves scouring the internet and local archives for historic mentions of an investigation location or its inhabitants. While this is still an important process, it’s only a small part of the whole picture. Location, person and property research are valuable when conducting a field “investigation” but if your goal is to make discoveries that benefit the field (and future research) as a whole, you need to step it up.

In many cases, background research is as important (if not more important) than the current research you’re doing to answer your question and it’s a step that far too many people skip over halfheartedly. When working with unknowns background research comes in two main categories:

Physical Principle Research (i.e. technology)
&
Historic Experimental Research (i.e. what's been researched before & the results)

"Physical Principle Research" involves developing a functional understanding of the physical elements that you may encounter throughout the course of the study. This could involve several environmental field elements such as electromagnetic energy, ION's and Sound or be equipment specific for any or all of the elements mentioned and more. Which areas to research really depend upon the focus of your study. Without this important aspect you may, for example, be examining changes in temperature which you consider to be unusual, but are in fact quite normal. You may see an increase or decrease in electromagnetic fields and assume the change is significant when in fact it isn't. The general rule is that if you don't understand what your equipment does, what it measures and why, your hypothesis and interpretation is fairly useless in terms of scientific evidence. Not to mention that you will be made to look like a fool when someone who does understand these concepts attempts to repeat your results.

Historic Experimental Research will help prevent you starting from scratch on a question or concept that may have already been answered or principle that has already been established. It will also insure you don't the repeat mistakes that someone else might have made and it will give you a very clear understanding of the task at hand when seen from multiple perspectives.

Historic research can be done on-line or with books and publications (although bear in mind that the books route will be more tedious). Our website has a growing research library that may help present ideas or answers. If you are searching using Google, keep in mind that many published research papers will include an "Abstract" segment, which is essentially a summary of the research contained in the paper. A quick and easy way to apply this information would be to include the word "Abstract" in your search term. For example to search for paranormal research conducted involving magnetic fields you could search for "Abstract Paranormal EMF" or "Abstract Paranormal Electromagnetic" etc.

Construct a Hypothesis

So now you have your question/purpose, and you have done your research to the best of your ability (or should have). Now it is time for form your hypothesis. A hypothesis is essentially an educated guess about how things work.

For example:

"If I *do this*, then *this* will happen."

A hypothesis is a key element in your experimentation process. It challenges your current understanding of the question in play and allows you to take apart (at least mentally) the principle or element you are trying understand and explore its behavior and limitations. This is the precursor to learning, and it's vital.

You must state your hypothesis in a way that you can easily measure, and of course, your hypothesis should be constructed in a way to help you answer your original question.

Here's an example:

One of the many subset questions that could be explored when researching our "Do Ghosts Exist" question is:

"Does sunlight have an effect on the measured electromagnetic fields in a subject location?"

From here you form an opinion which ultimately becomes your hypothesis:

Your potential hypothesis:

“Sunlight will have no effect on the measured Electromagnetic fields in the room”

But what do you think? Do you think it WILL have an effect? If so, will it increase or decrease the EMF levels? If it does have an effect what does this say about research conducted during the day? How do the readings compare to night time? How much of the effect is due to people in the neighborhood not using their lights during the day? As you can see there are many questions that will arise from the attempt at answering that one simple question and subsequently you will form a hypothesis about each one. That’s how science is done (at least correctly). Essentially you’re looking for ways to test the boundaries and elements that make up your questions and forming an opinion about will happen when you perform those tests. To find the answers to these questions we’ll need to continue to the next step in the scientific method.

Test Your Hypothesis by Doing an Experiment

Here goes, I’m going to say it…”Significant discoveries are never made on a paranormal investigation that does not have an experimentation component”. I can hear the uproar already. Well it’s true and if you don’t believe me try to name one significant discovery that HAS been made on an investigation without experimentation? Keep in mind photos, videos and even audio are, subjective, inconclusive and are ultimately only Data (compelling or not). They do not constitute an advancement of the cause in terms of technology or demonstrable evidence. The only investigations that have ever yielded tangible, useful information (i.e. things that benefit future generations of research) are the ones that have had an experimentation component. Need some examples? OK here’s a few *(They are not in any specific order)*:

An investigation into the alleged haunting of Hampton Court Palace: Psychological variables and magnetic fields
Published in Journal of Parapsychology, 66(4), 387-408.

“Results suggested a significant overall relationship between the location of experiences and variance of local magnetic fields.”

Experimenter Effect In Para-psychological Research
Original publication and copyright: Journal of Parapsychology, 1976

A review of the literature suggests that experimenter PK can influence laboratory investigations of psychokinesis and precognition.

Future Telling – A Meta-Analysis of Forced Choice Precognition, 1935-1987
Journal of Parapsychology, Vol. 53, December 1989

“Our meta-analysis of forced-choice precognition experiments confirms the existence of a small but highly significant precognition effect. The effect appears to be replicable; significant outcomes are reported by 40 investigators using a variety of methodological paradigms and subject populations.”

A Compendium of the Evidence for Psi
European Journal of Parapsychology, 2003, 18, 33-52

“While the conditions for precise replication and for producing the phenomena to hand, still elude researchers, the

psi-effect is replicable to the extent that it permits meaningful and productive research."

The information in these research results may not be the smoking gun in terms of paranormal evidence, but it is VERY significant in terms of inserting yet another piece into what is ultimately a very large, complex puzzle. There are no shortcuts to a definitive answer when dealing with something so incredibly unknown. An investigation is useful for confirming claims, understanding the subject environment, debunking, and as fodder for developing a research plan or even a hypothesis. But to understand (or even attempt to understand) what is truly going on requires multiple levels of focused experimentation.

This is where the real work is done and main body of discoveries are made. It's also the area that separates the serious minded researcher from the hobby minded enthusiast. Your experiment tests whether your hypothesis is supported or not.

Keep in mind that it is vitally important for your experiment to be a "fair" test. You conduct a fair test by making sure that you change ONLY ONE factor at a time while keeping ALL other conditions the same. You should also repeat your experiments several times to make sure that the first results weren't just an accident.

Analyze Your Data and Draw a Conclusion

This stage is fairly self-explanatory. Once your experimentation is complete, you collect your measurements and analyze them to see if they support your hypothesis or not. During this stage you may produce statistical information and comparisons between controlled elements and elements involved in the experimental process to verify that changes did indeed occur. You then determine if those changes support your hypothesis.

Here's a basic example:

"We measure EMF readings near a window. To establish a "control" reading we have a second covered, data logging meter set up in the same area (covered with a 12-inch by 12-inch black box so no light can reach the readable area of the meter). We then measure EMF in the same place on all meters during the day and night. When the experiment is done we compare the readings from the covered meter (Our control) with the readings from the uncovered meter. If there is a variance we can say that "light" may have an effect on EMF readings. This will of course open the doors to further experiments where we can vary the elements of the test such as location, season, time of day etc. We can even vary the equipment and use a spectroscope to establish frequencies."

Many scientists often find that their hypothesis was not supported. If that happens to you don't be discouraged. Any result is an answer, and that's progress. When a hypothesis is not supported, very often the response is to construct a new hypothesis based on the information learned during the experiment. This starts the entire process of the scientific method over again. Even if you find that your hypothesis IS supported, you may want to test it again in a new way to help gain a deeper understanding of the principles at play. Repetition helps to confirm results and helps eliminate the possibility of errors or the element of chance.

Communicate Your Results

Communication of your results and the methods you used to achieve them for peer review is extremely important. The more other people test your findings and arrive at the same result, the more significant your findings become to the scientific world. Like I said before Science thrives on repeatable and demonstrable concepts. So don't horde your findings and hide your evidence to prevent it from being "stolen" like so many groups do today. There is no need to worry, if you publish your results in as many places as you can find it will be date stamped and the world will know who found it first. Not sharing means no one else can benefit from what you have learned and remember if it's not repeatable it's not proof. I know photos, audio and video seem like compelling evidence, but they will never, ever be proof no matter how good they are because they are not repeatable for peer review. Proof of a paranormal

existence lies in the micro experimentation of the many elements that support the concept. It is only through this method that the concept of an after-life, alternate dimensions, psychic ability or paranormal energy could ever be shown viable. I know many people feel that personal experiences are the most convincing, but if you research the fallibility of the human mind you will find that we can't simply trust our experiences. There are too many factors that can fool or sway our perceptions.

Even though we show the scientific method as a series of steps, keep in mind that new information or thinking might cause a reason to back up and repeat steps at any point during the process (something known as the **iterative process)**.

There is never a final answer and the best advice I can ever give anyone setting out on the path of scientific research (paranormal or otherwise) is:

"Be prepared to be wrong"

Happy hunting.