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A Student's Guide to Studying Weird Things

Frank Trocco

... popular ideas of our time that have little or no scientific support include dowsing, the Bermuda Triangle, poltergeists, biorhythms, creationism, levitation, psychokinesis, astrology, ghosts, psychic detectives, UFOs, remote viewing, Kirlian auras, emotions in plants, life after death, monsters, graphology, crypto-zoology, clairvoyance, mediums, pyramid power, faith healing, Big Foot, psychic prospecting, haunted houses, perpetual motion machines, antigravity locations, and, amusingly, astrological birth control. (Shermer, p. 274)

A student walked into my office recently and excitedly told me that she wanted to study the “Starchild.” I had no idea what she was talking about. The Starchild, she explained, is a remarkable 900 year-old skull, found in Mexico about seventy years ago. One researcher, Lloyd Pye, believes it is from “some sort of human-alien hybrid,” the result of the human race evolving through “off-world intervention.” I invited her to have a seat.

As a science teacher in an interdisciplinary program, I often encounter students who want to study topics that many of my colleagues find non-academic, and outside the boundaries of traditional scientific studies in biology, geology, health, chemistry, and physics. It is difficult for an instructor, working within the western scientific tradition, to accommodate requests to work with unconventional topics, such as astrology, Reiki, channeling, Aurevedic Medicine, Chakras, homeopathy, Facilitated Communication, Intelligent Design, Magnet Therapy, Afrocentric Theory, Chi, Therapeutic Touch, and ESP, because these subjects do not appear to be consistent with traditional academic content and disciplinary requirements.

One approach is to explain that these topics are not legitimate academic subjects, and students are not going to learn anything from researching them. However, academic disciplines, such as science, health, and history are not “things,” or encyclopedias, full of truth, they are processes used to investigate ideas and phenomena. Steering students away from studying subjects that appear to be extraordinary, discourages many from pursuing unconventional interests that could lead to deep scholarship and significant personal discoveries. In fact, unconventional topics provide excellent terrain for students to learn to stretch their analytical and critically reflective skills.

A negative attitude toward topics individuals are passionate about reinforces a mistrust of science, professors, and academia—an anti-science attitude common in books and articles written by advocates of unconventional subjects. I have previously

written articles attempting to encourage faculty to engage with these topics (Trocco, 1998; 2000). The following paper provides introductory guidelines that you, as a student, can use when studying unconventional subjects. These guidelines will keep you within the parameters of credit-worthy, academic course work.

What's Weird About That?

An unconventional subject is an area of study that is not typically covered in university courses. It is often encountered as a study interest in science and health classes, since these disciplines introduce students to concepts that appear similar to New Age concerns. There is nothing wrong with topics like astrology, Reiki, channeling, Tarot, homeopathy, and ESP, or anything unusual about an individual's interest in them. We are constantly confronted by remarkable claims on television, in books and magazines, on the Internet, and from alternative health care practitioners, and it is intriguing to consider which of these ideas have merit. The issue is not the topic itself (although some professors may believe it is), but that the process students often assume they can use to examine these subjects is not in keeping with traditional academic approaches.

When thinking about unconventional subjects, it is important to understand that, although academic programs have the research tools for studying these areas, professors do not typically recognize them as within their disciplines. Just as you would not expect to study Gothic architecture during a course in cell biology (although nothing is impossible), university professors do not see subjects such as crystal healing, the Human Energy Field, aromatherapy, and human auras as part of the science and health disciplines they are teaching.

Some unusual topics are not controversial. For example, if you are examining radically alternative education techniques, or an offbeat theory about economic trends, your topic might not be questioned. (But you are not always safe in the humanities and social sciences. Claiming that the holocaust may never have happened [Carrol, 2007], or that Greek wisdom was stolen from northern Africa [De Montellano, 1992], lands you on troublesome turf.) The kinds of studies that create conflict are ones whose findings contradict major assumptions and established understandings of western thinking and analysis, which is why I refer to them—tongue in cheek—as “weird” (e.g., the claims of the Flat Earth Society). If you are heading down such a path, you need to support your convictions with proof and a viable argument, just as all scholars do when they advance an idea that does not align itself with known concepts and theories.

This paper proposes investigative strategies that you can use for studying any topic, no matter how weird it may seem to individuals within conventional institutions, by

shaping it into a legitimate research project. It includes suggestions for helping you work with professors so that they will consider your pursuit of an unconventional topic an addition to your understanding, even when they may be inclined to feel that studying the topic you are interested in is valueless. Nearly all professors have their student's best academic interests at heart, and would love to turn your curiosity to pedagogical advantage if they see that you are willing to think about the subject thoroughly and critically. If you frame your scholastic efforts seriously, you have an opportunity to begin learning about science, medicine, the scientific method, and critical thinking, which is exactly what your professors have in mind for you (Lett, 1990).

Is Studying Weird Subjects Credible?

The short answer to this question is an unqualified, "Yes!" The problem is not what the subject is, but how you study it (i.e., your methodology), how deeply you analyze it (i.e., whether you uncover the "story beneath the story"), and how you select your facts (i.e., the resources you use).

Even though you want to deliberately research an unconventional topic, you may be unaware you cannot receive credit for studying your subject by only reading the books and articles written by practitioners and proponents (e.g., reading Butler's *How to Read the Aura and Practice Psychometry, Telepathy, and Clairvoyance* to understand parapsychology, Chopra's *Quantum Healing: Exploring the Frontiers of Mind/Body Medicine* to study medicine, or Cayce's *The Edgar Cayce Reader* to study psychics).

As a student in a university, you need to think of yourself as a scholar. When dealing with unrecognized phenomena and ideas, all scholars try to find a way to broaden their understanding so it includes information that tests their beliefs. Scholars actively look for arguments that may contradict their primary claims and provide a more sophisticated, less credulous point of view. If you only use books and articles written by the "believers," accredited institutions and most faculty will not recognize your project as academically admissible (see, Chaffee, 2002).

One student asked me about receiving academic credit for her work in Polarity Therapy. She assured me that the courses she was planning to take were "legitimate and respected." I told her that she could take courses at an institution sponsored by the American Polarity Therapy Association (APTA), but that transferring credits to a traditional university might be problematic. Many alternative institutions, such as the APTA, may be accredited, but rarely by a nationally recognized accrediting organization, such as the regional New England States Association of Schools and Colleges (through which Lesley University is accredited). Universities accredited by regional accrediting associations believe that their curricula reflects the highest

standards of the western educational model, and are often leery of alternative schools that do not have comparable accreditation.

It is OK if you do not fully agree with this model of accreditation, or approve of the judgments that are being made within our educational system. However, if you are reading this essay, you have chosen to pursue your education in an institution that is regionally accredited, so you have also chosen, perhaps unknowingly, to follow their accreditation guidelines and protocols. You will receive a return for your choice: credits from an accredited university have a broader reach; they are generally transferable to other programs, colleges, and universities, and have purchase when applying for employment and job advancement. For your efforts in an accredited institution you are given credibility throughout the college and university system, which is not usually the case with credits and courses from alternative institutions, even if they advertise that they are “accredited,” “nationally recognized,” or “state certified.”

Given this framework, if you want to investigate something unconventional, the challenge is to transform the study into work that is credible, scholarly, and acceptable within a conventional institutional. That is, you have to dress the weird in conventional clothing. How can you accomplish this?

The trick is to start with what you are already passionate about, regardless of how eccentric the topic may seem from the standpoint of traditional academia, and widen your investigation. Sometimes this is easy; sometimes it takes a bit more creativity. Your initial challenge is to ask yourself if you want your studies to be credible. This is a pivotal question as you may be intending to practice the modality you want to study, or because your research may be tied to deeply held beliefs. Typically, the question of credibility encourages you to broaden your work. If you are not concerned whether your studies are credible, there is little reason to be researching an unconventional topic in a conventional institution.

Using a Discipline to Frame Your Research

Most orthodox inquiry is divided into academic disciplines, so your initial strategy should be to look at your unorthodox subject through the lens of an established discipline, using the customary tools and methods of that system of analysis. With this procedure any subject can be examined and becomes credible by traditional academic standards. For instance, if we look at Polarity Therapy (PT) through the lens of history, sociology, or psychology, we can use these disciplines to lend their certainty to our studies, asking sound research questions, such as: History: how and where did PT originate? What social reasons led to the development of PT and other alternative therapies? Sociology: are there demographic differences in the patients

that use PT? What are the cure rates for PT patients compared with allopathic interventions for the same illnesses? Psychology: does PT, and other alternative medical modalities, satisfy patients in ways that allopathic medicine does not? These are appropriate research questions, even though they are being asked about an unconventional subject. By posing these questions, you can design a provocative inquiry that is closely tied to your unconventional interest.

This approach is especially useful in interdisciplinary programs, where you need to investigate issues through a number of lenses. However, you may need to complete research papers for courses or independent studies, for health or science credits. Once again, you can frame legitimate scientific questions about your topic from which to begin your inquiry: have the claimed results of PT been verified through medical studies? How does PT compare with established allopathic techniques and methods? How is PT's definition of "energy" the same or different from the definition of "energy" used in conventional science? Even if you say, as students have said to me, that they "do not agree philosophically with science or allopathic medicine," you can still find yourself willing to look at these questions in an attempt to understand your subject from an academically credible position.

It will be necessary for you to work collaboratively with professors to have them help you frame proper research questions, turning what may look like unusual studies into inquiries which you both agree are entirely suitable for credit.

"OK, So What Can't I Do?"

What you cannot do is to simply write a report (about, say, Magnet Therapy or Afrocentric Theory) and tell readers all the claims of proponents and believers, which you find in popular, New Age texts and web sites. This is not university-level research and is not worthy of credit. But you cannot research a conventional topic either, by using those kinds of references (and no professor wants you to write a "report"). Rather than compiling a report, university-level essays must have a clear thesis (the thesis explicitly details the point you are trying to make), and a well-referenced argument (the argument is your discussion throughout the paper which builds a case for your point).

Here is the thing to keep in mind: Your best strategy is to use exactly the same research skills, evaluative approach, and essay exposition for unconventional subjects as you would use for any topic in any class.

Resist the temptation to try to prove your beliefs. Many of the topics you will consider have been examined by university researchers, and their authenticity remains doubtful (Trocco, 2002). There is nothing wrong with trying to create a solid argument

that will attract your professor's attention (or knock her socks off), but remember the famous maxim of the skeptical community: "Extraordinary claims demand extraordinary evidence" (NOVA online, 1996). You can avoid falling into the need for extraordinary evidence by not making any extraordinary claims—generally a good tactic in any research statement.

Think of yourself primarily as an unbiased scholar, objectively entering the world of reports, journals, books, and experiments, who will attempt to add a bit of understanding to a slippery subject. Explain to your instructors that your primary interest is to comprehensively investigate your topic. Ask them to ask you hard questions about your subject and critical questions about your assessment of the issues. If you seem to be unbiased, your project will be more palatable to your instructor, and this is the clearest way to approach any research project. If you are already convinced about what you will find, why do you need to do research? Rather than trying to prove your beliefs, work on the best analysis you can manage of the complex and contradictory issues surrounding your topic.

The basic idea of a disciplinary approach is to use a methodology that positions you to examine your subject from the perspective of an objective outsider. You cannot make a persuasive argument if you approach your topic from too close a perspective. This is a standard approach throughout traditional academic studies. In your other coursework, when you are working with conventional topics, you may not recognize the emphasis placed on it.

When you care passionately about a subject, how can you maintain an impartial distance? One of the biggest challenges in research is separating private beliefs from rigorous analysis, without feeling that your central worldview is threatened. Not meeting this challenge will stand in the way of thoughtful and tough questioning, so work on standing back from your feelings and beliefs in order to conscientiously evaluate your material. The best technique is simply to do the best you can. All researchers face the same hurdle—imagine scientists working on what they think is a breakthrough cancer cure—and will bend over backwards to be impartial by looking for contradictions, misconceptions, and mistakes in their analysis. Keep in mind that if you appear too closely linked to your subject other researchers will doubt your willingness to competently investigate its most contentious elements.

How to Use a Bibliography in Reverse

After you have established an investigative discipline and an appropriate research question, read the skeptical literature applicable to your subject. These are books and articles that can offer you a challenging perspective through which to look at unconventional topics (Shermer, 2006). Because skeptics rigorously challenge

fantastic claims, weighing their questions, counter-theories, and analysis will draw you deeper into your subject. Skeptical critique can push you to look at criticisms and problematic assumptions you may not have considered. Reading skeptical analyses will help you to appear broad-minded, as conventional scholars always survey the opinions of researchers with opposing views.

At the beginning of your study, it is helpful to read something that looks at a broad range of critical thinking as it applies to unconventional ideas, even if you find it difficult to work your way completely through one of these texts (e.g., Gilovich 1991; Randi 1982; Schick and Vaughn 1995; Shermer 1997). If you are working on an independent study, and not in a classroom, you will not have an instructor immediately available to help you over difficult intellectual territory. In this case, specific articles on your topic from anthologies (e.g., Frazier 1991), or journals and web sites (e.g., *Skeptic* and *Skeptical Inquirer*) are helpful.

Do not be afraid of these texts—they cannot hurt you! I have found that most of my students do not appreciate the adversarial style in which they are written, but if you are interested in truth and knowledge, their critiques and examples will help strengthen your inquiry. No skeptical author can change your mind about the ideas you most cherish, but we can all use some encouragement to think a little more broadly.

You may feel that oppositional material is a frontal assault on your beliefs. After all, you could be interested in demonstrating that your unconventional topic has research merit and ultimate validity. In this case, alter the direct research approach, and borrow the following ancient rhetorical strategy for building an argument: study your opponent's arguments! Curiously, skeptical articles and books include potentially corroborative insights about unorthodox science and medicine. These skeptical resources are a good place to probe your topic, because the debunkers have done the background research.

Let us say that you are interested in channeling (i.e., the ability to contact spirits), and you read the article that skeptical writer Martin Gardner has written on this subject (e.g., Gardner 1996). Of course, the thrust of his rhetoric will be to challenge mediums and channelers; however, in order to do this effectively, he will first tell you all about them, including: the history of channeling, biographies of famous channelers and unexplained channeling sessions, why channelers themselves think channeling works, stories about exposed channeling frauds, former channelers who have exposed fraudulent channeling, magicians who have replicated the techniques of mediums and psychics, and (importantly) any celebrated (albeit controversial) results coming from conventional laboratories. All this will be followed by citations for books and articles where you can follow up on his sources.

If you are seriously interested in channeling, Gardner has just saved you a long day of basic library research! You can follow this process for almost any unconventional topic. Even though these skeptical authors are debunking this research, some of what they are challenging are findings by scientists in reputable university labs (Trocco, 2002). Research results can be interpreted in a multitude of ways. There is no reason why you cannot find the articles corroborating the unconventional topic and cite them in reverse of the skeptics to support your views!

Will this cause you to miss the skeptical author's point? No. What typically results are gradual changes in how you may view your topic and the research process. The idea is not to alter your fundamental belief in the authenticity of channeling, but to learn that its truth value and credibility are not obvious, and that the phenomenon (in some instances) may be due to natural, unrecognized causes (e.g., an active imagination). This can lead to deeper scrutiny which may eventually provide clues that corroborate some aspect of your study. Importantly, when you use skeptical reports and analysis in reverse, and in support of your central thesis, you are fully engaged in the research process.

“Why Do I Have to Address the Skeptics Anyway?!”

An irritated student studying Traditional Chinese Medicine (TCM) posed this question to me when I pressed him to investigate the skeptical viewpoint. I had previously suggested that he read “Traditional Medicine and Pseudoscience in China” by Sampson and Beyerstein. My two immediate answers were: 1) Reading skeptical literature indicates thorough scholarship, as it reveals an unconventional topic's academic weaknesses alongside the claims of the proponents; and, 2) Doing so will help you to establish your credibility.

“To whom?”, he asked, since he did not want to “fight over concepts and energies” that he knew were “not measurable.” I suggested that there were many possible situations in his future where knowing the science, criticism, and full spectrum of issues behind his unconventional subject would be useful. For example:

- 1) With clients who are trying to make a decision between TCM and allopathic medicine
- 2) at professional meetings or presentations where research is critiqued and critical questions are asked
- 3) when writing papers, either popular or scholarly
- 4) for protection, as legislatures may try to rule that TCM is dangerous or illegal (e.g., the unregulated use of herbs is continually challenged in congress, and midwifery is

strictly regulated in some states)
5) if you are ever interviewed for an article or on the radio.

In any of these circumstances, it helps if you have faithfully done your homework. You may not presently see yourself in these situations, but if you stay in an unconventional field, the chances are high that you will eventually find yourself needing the background that comes from thoroughly understanding the criticisms surrounding your topic. This is a good part of the reason why professors may find these subjects objectionable. They believe that working on weird topics will not prepare you for future research and employment, and are concerned about its long-range ramifications. Working in partnership with professors on creating a rigorous research process will help them avoid these fears.

Working From Outside the Subject

When writing about topics that are on the fringes of accepted knowledge, try to remove yourself from your explication of the claims, theories, and ideas you are describing. Even if you believe that crystals can heal cancer, readers will have more confidence in your judgment if they believe you are an impartial investigator.

It is necessary to gain the trust of your readers (including your professor) before you make extravagant claims. A strong, unproven assertion does not build confidence in you as a researcher. Experiment with taking a position “outside” your subject. This is usually described as being “objective,” but that word has unfortunate connotations. It does not mean you cannot be creative, and it does not exclude your personal opinions. (All scholarly articles include the educated opinions of the author.) However, being too much of an “insider,” or coming across as a crystal-healing proselytizer, will only work in limited venues.

Writing from the outside can be seen as a strategy in analytical composition. Students often begin their research careers as “dualistic” thinkers. This describes a typical, and simplistic, dichotomous worldview where everything is seen as pairs of opposites: good and bad, sacred and profane, science and pseudoscience. An explanatory step deeper than this brings us to “multiplistic” learners, who see the world from many points of view, with infinite shades of gray. While they are more accomplished, multiplistic thinkers often cannot make substantive distinctions among the many paths and alternatives open to them. Everything becomes relative. Your instructors would prefer that you move yet further to a “contextual” position, where you understand that there are many perspectives from which to view each issue; see yourself as coming from your own limited viewpoint, but allow yourself to make provisional judgments carefully based on the evidence you have uncovered (Daloz, 1986, p. 75-84).

One way to examine your subject contextually, and to take a broader view of its structure, is to look at it as an investigative journalist. Gather and describe the background information and facts, reserving your claims until you have built up a responsible argument. The kind of writing I am describing could be called “professional,” “critical,” “expository,” or “scholarly,” all of which are necessary for writing essays, book reviews, and theses. Although your writing is “objective,” that does not mean it cannot be personal, creative, anecdotal, and witty, like the best investigative reporting. In this context, the word “argument” does not imply negativity. It is a device that is used in the craft of research that provides readers with all the information they need to understand a topic, while offering them your own commentary, ideas, and analysis (Booth, Colomb, and Williams 1995). I am not suggesting that you ignore your feelings and intuition and become a rationalist, materialist, linear thinker (to see my suggestion in this black and white way is an example of dualistic thinking). However, if you base your discussion only on feelings and intuition, most readers will dismiss your work, even if your ideas are intriguing.

Once you begin your research, it is important to move beyond the opinions of the believers into scholarly references. Simply because a fact, opinion, or idea is in a book does not mean that you can quote it to substantiate your position. (This is especially true for Internet web pages.) For instance, you can quote the Bible to support a point you are making about the existence of God, and although this may have purchase with a minority of your readers, it would be lost on many. Similarly, The National Center for Complementary and Alternative Medicine cannot be your only reference for the efficacy of alternative medicine (Atwood, 2003), their immense public popularity and documentation for the mystical creation of crop circles (Nickel, 2002), or Intelligent Design (ID) theorists for the reliability of the theory of evolution (Carroll, 2005; Nature, 2008).

Finding reliable references on unconventional topics may be challenging. Web pages are often misleading, state claims without substantiating them, and are written by people without a commitment to telling both sides of the issue. It is important to use a tool which allows you to evaluate the trustworthiness of web sites (see: Lesley University Library, 2008).

Popular sources, that scholars do not find credible because of shallow analysis or untrustworthy research (e.g., magazines, web sites, and New Age texts), can serve as references as long as you include a careful assessment of their claims. One way to determine if a book or article is reliable is to see if it and its author is referenced in the scholarly journals that cover the same topic. You might also examine the author’s credentials or whether she has published in peer-reviewed journals. You may be discouraged when you feel you are on the right research track, only to discover your resources are of dubious distinction—keep looking! The ability to evaluate

appropriate sources is a skill, which will involve time in the library and discussions with your professors before you will be able to determine a reference's value with learned assurance.

A Study of Reiki

Joann came to me with an idea for an undergraduate thesis. She is a registered nurse working with critically ill patients who are in line for organ transplants. Sadly, many of her clients experience chronic pain, and there is little she can do to help them. She had heard about Reiki, a discipline similar to Therapeutic Touch (TT), where the practitioner, by using hands-on contact, is a conduit for "healing energy." Joann's preliminary reading told her that Reiki could help her clients, and she wanted to study it further. In truth, she was already convinced that Reiki was the answer she was looking for. Her study illustrates some of the issues we have been covering. She began by reading articles that were skeptical of Reiki and TT (Hinman and Richards, 1998):

I originally engaged the skeptics because you directed me to. However, I feel it has been an excellent approach. Without looking at the skeptics I would not have been able to really explore my thinking. I would have looked at the information from my [Reiki] sources as gospel. In doing so I would not have broadened my outlook, and certainly I would not have been able to entertain different ideas and conclusions. (J. Compagnone, personal communication, September 1997)

As Joann moved into the study, she found information that contradicted her views. One evening, she called me in distress, feeling that her entire thesis was a failure. Not true, I explained. Her project was just getting interesting! I advised her that rather than beginning as a believer, she could approach her subject from the perspective of a curious researcher who never knows what her investigation will uncover. In this process, she moved beyond dualistic thinking:

The study allowed me to maintain my scientific personality, yet find a place to stand between the two worlds that makes sense for me. I realized I did not have to have an either/or attitude. I found the shade of gray that worked for me. I loved looking at the skeptics. I enjoyed reading the skeptics because they made me question things in ways I would not have thought to question them.

Rather than being fully convinced by the skeptical perspective, Joann found herself able to look at her sources with a critical posture, finally making an educated, and contextual, judgment:

The skeptics helped me find my own perspective on Reiki rather than the perspective that I was spoon fed at the training I attended. I don't think it [the skeptical approach] hurt me in any way. The best part of the process is figuring out what you really believe

in your own heart, and how much of what you profess to believe is a regurgitation of what you have read from hard-core believers. Reading the skeptics is like having a sorting system that examines and sorts ideas determining which you want to keep and which you want to discard.

Joann was not brainwashed by skeptical, rational thinking during the research process: I enjoyed the skeptics because they forced me to find ME and my own opinions. If I really believed in a concept strongly no skeptic would be able to change that totally, but they might force me to examine the validity of my belief, and that is a good thing.

In fact, Joann still uses Reiki! “So, what was the point of all that skeptical research?” you might ask. Here is Joann’s answer:

I still do Reiki because I believe we all need to feel peace and love, and that touch is a powerful healer. I just removed the mysticism and some of the ritual hooey that I do not believe is necessary.

Her fundamental beliefs did not change, but her understanding of Reiki, alternative medicine, and the claims of holistic healers became academically grounded. Joann reconstructed Reiki so that its practice made rational sense and had personal meaning for her.

The Difference Between Angels and Air

Mary believes in angels. She is also interested in aliens, ghosts, and fairies. After a number of advising sessions about her essays, where I typically asked her for further evidence to substantiate her assertions, she was upset and wrote me a letter, saying, “You say there’s no proof for angels, but air is invisible, and we believe in it, don’t we?” I was excited by this question, feeling that we could have a cooperative dialogue, and replied:

In fact, air is not invisible, at least, not in the way science would examine it, and not in the way angels are. Although indiscernible to the human eye, air is visible to a multiplicity of other measuring parameters (e.g., wind gauges, human skin, and radar). Angels have not proven themselves visible to any measurement other than human testimony, and to add to their difficulty, they don’t fit into any secular theoretical framework that can be substantiated. This is why a skeptic would claim that air exists, but angels (aliens, ghosts, or fairies) do not. What kind of proof for the existence of angels can you provide besides your belief? Now, and I hope this isn’t confusing but it’s an important point, that doesn’t mean that angels do not exist (and it doesn’t mean that I don’t believe they exist). As you point out in your letter, the

scientific perspective is coming from a particular frame of reference. When I ask you to address skeptical claims it is only to sharpen your approach to these provocative topics.

I have found after exchanges like this, even when I have purposely made room for an individual's private convictions, that students often take my response as an indication of hostility toward their studies, or as negative criticism. Although I feel engaged, my questions and critique shut them down. Try to determine if your instructor is actually antagonistic to your work. Ask her directly if you are unsure. It is a useful tactic to see your instructor as an individual whom you have to lead through an educational sequence about the ideas that interest you.

You will often find instructors asking you difficult and critical questions. Sometimes, their questions will seem judgmental, making you feel foolish. This can be discouraging. However, you have not been individually selected for ridicule; this process is part of the way all research is carried out. Researchers form a preliminary hypothesis at the beginning of their work (similar to your essay's thesis statement). Then they diligently collect their data, seldom knowing, even as months pass, where the trail is leading them. Finally, they come to the end of their research, compile all their evidence, analyze their data, and only then are they prepared to make a claim. At this point, they expect the community of scholars to ask aggressive questions about their conclusions, and to share criticisms about weak points in their argument. During this stage, when they go public, just as you have to "go public" by turning your paper (or ideas) into your professor, it is important to have a tough skin.

Try not to take your professor's critique personally, as she is searching your paper or proposal for a number of key, scholarly ingredients: the availability of sources to research the central question; the clarity of the thesis statement; the originality of the thinking; the completeness of the literature review; the ability to support arguments with credible data and citations; the integrity of the overall approach; the conclusions that have been drawn; and, the quality of the writing.

It may not appear this way, but in asking critical-sounding questions it is probable that your professor is trying to help you strengthen your study. Although it may seem like she is attempting to discredit you and your work, it is more likely that she is treating your essay as a serious piece of research. When confronted by what feels like criticism, think of yourself and your professor as part of a very old scholarly tradition.

Do Not Be Afraid of Contrary Views

Patti told me that she was not interested in arguing with the skeptics, but that she wanted to find "hard evidence" for her beliefs, in this case, about astrology. I agreed

with her that many people do not like to take an adversarial position in their work. I pointed out that she did not need to be familiar with the issues, claims, and counterclaims surrounding astrology for the purpose of engaging in angry debate. Critically reviewing unorthodox claims is not about fighting, but about fully understanding what you are investigating so you can articulate the contradictory sides of an issue. Including contrary viewpoints often strengthens your argument.

Do not worry that incorporating skeptical viewpoints in an essay weakens your position with readers. In fact, it has just the opposite effect. Adding disparate views indicates that your research has been thorough, and that you are not afraid of equivocal or dis-confirming data. In most essays, it is not necessary to refute skeptical critique. Simply acknowledging these ideas often adds strength to your disquisition, because if you do not include them readers are left thinking that you are not aware that opposing arguments exist.

I told Patti that if she was committed to looking for hard evidence, then she could not avoid examining skeptical perspectives. It is the skeptics who attempt to make unconventional evidence “soft.” For instance, Patti wanted to cite an astrological researcher. I asked her to go ahead and quote his opinions and findings, but to not take them completely at face value. Ask some probing questions: is his work reputable? how do you know it is? why do skeptics question his results? has his data been corroborated? If you are looking for substantive proof, you cannot ignore these questions. Asking them will make the difference between deciding that something feels right, and determining that it is right (see: Shermer’s “25 fallacies,” 1997).

Looking into the skeptical side of things does not have to take away from your primary interests. It does not need to direct you away from your passion, as the underlying intention is to enrich your work. Sometimes skillful scholarship demands that we look into things that seem to take us far afield, but it is ultimately useful if the effort helps us to strengthen our analysis. When I suggest that you look at the skeptical side of things, I mean: 1) reading an article about your subject written by a critical author; 2) interviewing a researcher who does not agree with your approach; 3) looking at some of the general objections to unorthodox modalities; or, 4) reading a book that will help you to think critically about unconventional topics. This is not a huge commitment—it is simply doing your homework!

Everything Is Relative! (Or Is It?)

There are university scholars who believe that the accepted demarcation between science and magic, the natural and the supernatural, is completely arbitrary. In this view, science is a narrative, similar to any other cultural mythology. A less radical approach comes from the field of science studies, which claims that science is

basically a social endeavor, resulting from selective observation and disputes over the interpretation of those observations. It is not that reality is not “out there,” but our conception of reality is a negotiated truth, socially constructed by scientists and theorists (see: e.g., Collins and Pinch 1993). The feminist critique of science, another view that attempts to unpack the hegemony of scientific materialism, interprets science as being seriously affected through centuries of domination by one-dimensional thinking. The feminist critique asks if our interpretation of scientific facts, perhaps even the laws of physics, would be different if broader perspectives had been considered (e.g., Keller 1985).

These critiques of science offer a compelling approach for students pursuing unconventional interests to apply in their analyses. After all, if science itself is built on an insecure foundation; if the “truth” it describes is but one possible interpretation of reality, how can it make any epistemic demands on what it classifies as pseudoscience? By using these constructivist approaches, you call into question the assumptions of conventional scientific thinking. All of a sudden, your extraordinary topic becomes no more “out there” than superstrings, prions, or black holes, mystifying but accepted features of orthodox research. Unfortunately, the deeper you probe this critique of science the more confusing and contentious it becomes. Academic scholars across the country struggle to find unambiguous and useful meaning in this approach. The social constructivist view demands careful study if it is to be appropriately utilized in your arguments.

There is a place in your inquiry where you can instructively draw upon these ideas. The field of science studies is particularly interested in controversies in science, which include fringe beliefs, and how these controversies display the side of science that is messy and open to scrutiny. It is easy for us to have an antiseptic picture of scientists in their labs, expertly examining nature, and coming up with remarkable discoveries. This is seldom the case. Science studies puts a human face on scientists showing them struggling to make sense of their data, and demonstrating that some of the greatest discoveries have an untidy experimental history (e.g., Collins and Pinch 1993; 1998).

Looking through this lens will help you to show that science is not a closed system simply discovering the truth that exists in the world, but is an active process that includes many questionable social dimensions (e.g., power, funding, politics, human error, and fraud). Understanding the social role within science will help you to develop a more sophisticated view of how science actually works, and why some ideas (including, perhaps, the one you are studying) are typically excluded. In this approach, initial claims over the truth or falsity of a subject are suspended. Essays centered on science studies might ask: Why is Facilitated Communication considered a pseudoscience? What does it mean to call something “scientific”? What determines the boundary between science and non-science?

This analysis can sometimes turn relativistic (i.e., all things are equally true), which will not help you investigate or evaluate the phenomena you are studying. If you arrive at the conclusion that we are all simply story tellers and no one's story is any better, or more accurate, than anyone else's, you have slipped into a multiplistic view of reality which will not allow you to make learned judgments about your topic. This posture is not helpful for a student seeking credibility or seeking to contribute to the academic debate. It is necessary to guide yourself with care, and with your professor's assistance, along the path of scientific deconstruction, so that all of western theory and expertise are not abandoned (Gross and Levitt 1994).

My Professor Doesn't Think My Topic Exists!

Students studying subtle and inexplicable phenomena quickly run into an investigative riddle that is something like searching for the end of a Möbius strip. If you are looking for a phenomenon that does not exist, you are a good researcher if you do not find it, and a poor one if you do (e.g., a flying saucer behind the Hale-Bopp comet). However, since it is impossible to prove the non-existence of many phenomena (e.g., channeling, Chi, or telepathy), it is also impossible to state unequivocally whether you are actually studying anything. You may end up knowing a lot about exquisitely subtle phenomena, or you may know a lot about nothing. One could absurdly say, students who study these phenomena know a lot of nothing about nothing, since any "findings" they "discover" would not actually exist, at least in reference to the non-thing they are examining. (This is similar to the "experimenter's regress," see: Collins & Pinch, 1993.)

For example, Ian Stevenson, former Professor of Psychiatry and Director of the Division of Personality Studies at the University of Virginia, worked for thirty years documenting cases of apparent reincarnation. Is his work a phenomenological (i.e., reincarnation is a fact that we can study) or a sociological (i.e., it is intriguing that all these people believe in reincarnation) inquiry? Assuming that they are studying something that exists, many students choose to pursue their fringe topics as a "phenomenon," even though a comprehensive sociological, anthropological, psychological, or scientific approach would be more appropriate. Most of the ideas on the edges of science and medicine can be scrutinized in this way (see: Trocco, 1998; Barrett, 2008).

Your instructors want to help you out of this conundrum, and save you from a fruitless and time consuming inquiry. To this end, they may preempt research into areas that they believe are ludicrous or dead ends. Just as in a field botany class you would not expect a professor to encourage students to spend their time searching the hills for a flower known only in folklore, professors are unlikely to approve studies of

phenomena that they “know” do not exist. As we have seen, however, ultimate truth is difficult to establish, and meaningful inquiry leads us into further, wondrous complexity.

My advice to you is to persevere. If your subject is worth studying, you will eventually find a credible way to frame your research that meets your needs, and the scholastic demands of your professor. Other people may think your studies are weird, but doing scholarly work lends legitimacy to your subject. If your professor values knowledge and honest inquiry, he or she will help you find a way to transform your study into a collaboration through which you will both learn something about research while expanding your individual views of the world.

Did you wonder what happened to the student who wanted to study Lloyd Pye's Starchild? She completed a research essay for her class, receiving credit for the assignment. In the conclusion she wrote:

Lloyd Pye has brought an interesting case to the table. His findings and questions entertain me, but with the evidence that skeptics and scientists have brought, I cannot say that I believe him as much as I would like to. The fact that science can counter so many of his claims makes me lose faith in his other arguments . . . I will have to conclude that the Starchild as an actual alien phenomenon is possible, but not likely. . . I will hope and wait for the next claim and shred of proof that aliens do exist. (Personal communication, D'Entremont, 2008).

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References

- Atwood, K.C. (2003). The ongoing problem with the National Center for Complementary and Alternative Medicine. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/2003-09/alternative-medicine.html>.
- Barrett, S. (2008). Quackwatch. Retrieved January 14, 2008, from <http://www.quackwatch.com/>.
- Booth, W. C., Colomb, G. G., and Williams, J.M. (1995). *The craft of research*. Chicago: University of Chicago Press.
- Butler, W.E. (1998). *How to read the aura and practice psychometry, telepathy, and clairvoyance*. NY: Destiny Books.
- Carrol, R.T. (2005). Holocaust denial. In *The Skeptic's Dictionary*. Retrieved January 14, 2008, from <http://skepdic.com/holocaustdenial.html>.
- Carroll, R.T. (2005). Intelligent Design. In *The Skeptic's Dictionary*. Retrieved January 14, 2008, from <http://skepdic.com/intelligentdesign.html>.
- Cayce, H. L. (Ed.). (1969). *The Edgar Cayce reader*. New York: Warner Books.
- Chaffee, J. (2002). *Critical thinking, thoughtful writing: A rhetoric with readings*. NY: Houghton Mifflin.
- Collins, H. and Pinch, T. (1993). *The Golem: What everyone should know about science*. NY: Cambridge University Press.
- Collins, H. and Pinch, T. (1998). *The Golem at large: What you should know about technology*. New York: Cambridge University Press.
- Chopra, D. (1989). *Quantum healing: Exploring the frontiers of mind/body medicine*. NY: Bantam Books.
- Daloz, L. A. *Effective teaching and mentoring: Realizing the transformational power of adult learning experiences*. (1986). San Francisco: Jossey-Bass Publishers.
- De Montellano, B.O. (1992). Magic melanin: Spreading scientific illiteracy among minorities. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/9201/minority.html>.

- Frazier, Kendrick. (Ed.). (1991). *The hundredth monkey and other paradigms of the paranormal*. NY: Prometheus Books.
- Gardner, M. (1992). Marianne Williamson and "A Course In Miracles." *Skeptical Inquirer*, 17(1), 17-23.
- Gilovich, T. (1991). *How we know what isn't so: The fallibility of human reason in everyday life*. NY: The Free Press.
- Gross, P. R. and Levitt, N. (1994). *Higher superstition: The academic left and its quarrels with science*. Baltimore: The John Hopkins University Press.
- Hinman, Al and Richards, A. (1998). Fourth-grade science project casts doubt on "therapeutic touch." Retrieved January 14, 2008, from <http://www.cnn.com/HEALTH/9804/01/therapeutic.touch/>.
- Keller, E. F. (1985). *Reflections on gender and science*. New Haven: Yale University Press.
- Lesley University Library. (2008). *Evaluating Web Sites*. Retrieved January 14, 2008, from http://www.lesley.edu/library/guides/research/evaluating_web.html.
- Lett, J. (1990). A field guide to critical thinking. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/9012/critical-thinking.html>.
- Nickel, J. (2002). Circular reasoning: The "mystery" of crop circles and their "orbs" of light. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/2002-09/crop-circles.html>.
- NOVA online. (1996). Kidnapped by UFOs? Interview with Carl Sagan. Retrieved January 14, 2008, from <http://www.pbs.org/wgbh/nova/aliens/carlsagan.html>.
- Randi, J. (1982). *Flim-Flam: The truth about unicorns, parapsychology, and other delusions*. NY: Prometheus Books.
- Schick, Jr., T. and Vaughn, L. (1995). *How to think about weird things: Critical thinking for a New Age*. California: Mayfield Publishing Company.
- Sampson, W. and Barry L. B. (1997). Traditional medicine and pseudoscience in China: A report of the second CSICOP delegation. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/9607/china.html>.

Shermer, M. (1997). *Why people believe weird things: Pseudoscience, superstition, and other confusions of our time*. NY: W.H. Freeman.

Shermer, M. (1997). *How thinking goes wrong: Twenty-five fallacies that lead us to believe weird things*. Retrieved January 14, 2008, from <http://www.positiveatheism.org/writ/sherm3.htm>.

Shermer, M. (2006). *A skeptical manifesto*. In *Skeptic*. Retrieved January 14, 2008, from <http://www.skepticforum.com/viewtopic.php?f=6&t=3138>.

Skeptic: Extraordinary Claims, Revolutionary Ideas, and the Promotion of Science. Altadena, CA: The Skeptics Society: <http://www.skeptic.com/>.

Skeptical inquirer: The Magazine for Science and Reason. Amherst, New York: The Committee for the Scientific Investigation of Claims of the Paranormal: <http://www.csicop.org/>.

Nature. (2008). *Spread the word: Evolution is a scientific fact, and every organization whose research depends on it should explain why*. In *Nature*. Retrieved January 14, 2008, from <http://www.nature.com/nature/journal/v451/n7175/full/451108b.html>.

Trocco, F. (1998). *How to study weird things*. In *Skeptical Inquirer*. Retrieved January 14, 2008, from <http://csicop.org/si/9809/weird.html>.

Trocco, F. (2000). *Encouraging students to study weird things*. *Phi Delta Kappan*, 81(8), 628-31.

Trocco, F. (2002). *On the fringes of credibility: The boundary question between science and non-science*. *Skeptic*. 9(2), 32-39.

Note: This bibliography contains a number of links to Internet articles that can be used to follow up on ideas covered in this paper.