

The Flexibility of Scientific Rhetoric: A Case Study of UFO Researchers

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The case of ufology demonstrates that cultural packaging—a sort of once-removed indication of scientific authority—can be key in creating knowledge accepted as scientific. This adds a new dimension to the argument that scientific legitimacy is constructed, not just from scientific methodologies and institutional location, but also of language, culture, rhetoric, and symbols. Fringe researchers can make their cases for legitimacy using a variety of strategies—few of which involve actual research. Outside of the scientific community, scientific-sounding explanations and proclamations of expert statuses hold sway. Ambiguities about what constitutes science can be capitalized upon by groups like the UFO research community that assembles shards of legitimacy using science as a cultural template.

KEY WORDS: sociology of science; UFOs; deviant science.

The study of UFOs—known as ufology—was removed from the agenda of the scientific establishment in the 1960s. Despite this—and despite the fact that its methods and findings differ sharply from those of mainstream science, ufology survives today as an independent research community that models itself after mainstream science. This article attempts to explain how UFO research has survived as a source of claims—claims accepted by some audiences as scientific—despite its rejection by conventional science. Using a science-heavy cultural strategy, ufology has managed to create an alternative scientific world and a support base in which the truth claims it advances are accepted as scientific. By taking the symbolic frame of science and replacing the content with its own set of completely different facts and theories, ufology effectively re-appropriates the cultural meaning of science to support its own endeavors. The findings are based on original participant-observation research conducted over a two-year period at UFO

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research conferences, museums, research centers, and institutes, and on archival, bibliographic, and Internet research

Ufologists' research activities begin with the assumption that UFOs are real and that extraterrestrials are regularly visiting Earth. Space aliens come, ufologists say, to lead humans into the cosmic order of the universe, to warn us of coming danger, and to harvest human DNA for breeding projects. Like many of their ideas, the methodologies used by UFO researchers break sharply from conventional science, combining second-hand testimony, hypnosis, sky-watches, and intuition with a very vocal emphasis on scientific research, empirical data, hypothesis testing, and other staples of mainstream scientific practice. Ufologists insist that ufology is a first-class science and that the presence of aliens on Earth is a scientific fact. While ufology meets little approval in the world of conventional scientific practice, it is embraced wholeheartedly among audiences of its own cultivation. The UFO research community has been alive for more than fifty years and claims millions of devotees worldwide.

One clear truth arises from ufology's fusion of amazing stories and empirical research: Scientific rhetoric is extremely flexible, in fact far more so than is usually acknowledged in discussions of science as a form of authority. An examination of the UFO research community demonstrates the extraordinary malleability of science as a cultural signifier. The success of ufology implies that the culture of science—if only the aroma of its conventional form—is something that can be exported, twisted, and fitted to lend credibility to even the most unlikely claims to truth. To begin probing these questions, this article looks at a variety of ways that ufologists have repackaged the notion of science to fit their cause and to make their case.

Ufologist Jean Jacques Velasco is typical of ufologists who claim that UFO research is ordinary, conventional science:

The UFO research community has studied hundreds of observations over decades. The research has been objective and systematic . . . They are developing a chronological path of information and are performing a statistical study (1999).

Relying on staples of scientific credibility, ufologists like Velasco stress the use of empirical testing, statistical study, and "hard data."

In addition to the many difficulties inherent in scientifically studying UFOs, presenting ufology as a science has been an uphill battle since the 1960s, when a scientific panel sponsored by the United States Air Force issued a formal report that UFOs were not worthy of scientific study (Condon and Gillmor 1969). Since then, the search for extraterrestrial intelligence has had barely a bit part in the march of mainstream science (Shostak, Drake and Shostak 1998). Researchers like Velasco have pursued legitimacy by trying to reconnect the practice of ufology to the conventional scientific community.

As rigorously as ufology attaches itself to scientific principles, it must also put distance between itself and conventional science in order to begin to explain why

UFO research was cast out of mainstream scientific practice. One way ufologists do this is through a detailed critique of conventional science, arguing that ufology's unorthodox methods—including hypnosis, sky-watches, or witness testimony—are superior in uncovering the ultimate truth about the physical universe. Derrel Sims represents this style of ufology with a rhetoric that in some ways contradicts and undermines the scientific-style research of Velasco and others who present their work as ordinary science. Sims stresses the value of first-hand knowledge over scientific research:

You want a scientific institute to tell you that aliens exist? I already know aliens exist because when I was four years old one was standing next to my bed (1998).

While Sims might not always speak fondly of mainstream scientific institutes, he claims that his investigations of alien implants *are* scientific. They involve dusting self-described alien abductees for alien fingerprints, removing “alien implants” from people, and using hypnosis to gather data about extraterrestrial life forms. Sims and others like him sometimes go to great lengths to underscore the ways in which ufology differs from conventional science, stressing that their research is a huge improvement over conventional science because of its superior ability to gather facts. Sims and other overtly unconventional researchers coexist with the comparatively more scientific researchers under the single loose organizational umbrella of ufology.

Ufology's parallel world of science is less rigorous and very obviously less conventionally scientific than that of their colleagues in the mainstream world of academic, government, and commercial laboratories. Nonetheless, ufology's enterprise offers insight into important questions about the use of science as a symbol of legitimacy. That ufologists have little impact on the mainstream world of science does not make their work universally irrelevant. To their followers and students, ufologists' work is accepted as true science. Ufology's success raises several questions: What happens when discredited sciences resurrect themselves outside the conventional jurisdiction of science? How do discredited sciences construct their own turf for scientific knowledge-making? What influence does conventional science have over the ability of rival groups to spread knowledge—knowledge presented as scientific—to lay audiences?

The diversity of people and views within the UFO research community reflects not just the tolerance of its members, but also tensions between the seemingly incongruous goals of the movement. On one hand, ufology gains legitimacy by claiming to use methods that draw on conventional science. On the other, it must account for its *de facto* rejection by the mainstream scientific community. The pressures that arise from ufology's simultaneous attachments and separations from mainstream science raise questions about the culture of scientific certainty and suggest that the authority-bearing ethos of science is, to a certain degree, up for grabs.

The question of how scientists jockey for advantage over competing truth claims-makers has produced studies about the nature of mainstream scientists'

power. Such studies have examined practices of boundary maintenance (Gieryn 1983; Gieryn, Bevens and Zehr 1985), professionalization, and monopolization of legitimacy (Cole and Cole 1979; Latour and Woolgar 1986; Mulkay 1980; O'Connor and Meadows 1976) as components of scientists' efforts to increase their ideological legitimacy and to make their field of authority impermeable to other truth claims-makers.¹ Other studies find that research programs that do not fit within the norms of mainstream professional science are cast out, along with their practitioners. The bodies of knowledge they produce become "rejected knowledge" (Collins 1983, 2001; Pickering 1993).

As a rival science, the case of ufology complements what is known about the enterprise of scientific knowledge-making. A long line of research demonstrates that scientists consistently engage in practices aimed to broaden and defend their intellectual turf and that professional scientists have increased their status by promoting their activities as unique and their claims as objective (Gieryn 1999, 1992; Gieryn et al. 1985; Moore 1996).² In examining the boundaries and pressures of science, however, scholars have tended to focus exclusively on what occurs inside the boundaries drawn by the professional community of scientists rather than on groups like ufology that have been barred from or squeezed out of the conventional knowledge-making processes. The few examinations of nonconformity to the social pressures of science have for the most part involved not outsider researchers and agendas excluded from the scientific community, but the inside deviance of mainstream professional scientists who commit fraud or use illegitimate means to success such as plagiarism or data falsification (Zuckerman 1968; Hagstrom 1974; Babbage 1975; Woolf 1981). Studies of resistance to scientific innovation also examine the phenomenon as it is manifested inside the mainstream scientific community (Kuhn 1970 [1962]; Cole 1970; Aronson 1996), and examinations of the resources and rewards structures that shape science tend also to focus inside the scientific community (Cole and Cole 1967; Latour and Woolgar 1986;

¹For example, in examining public trials on the issue of teaching evolution in public schools, Gieryn et al. (1985) argue that the trials were launched strategically by the scientific community as a means of protecting and expanding their professional latitude. Similarly, Gieryn (1983) finds that the ideology and collective identity fostered by scientists serve to demarcate "science" from "non-science" and, ultimately, to increase the cognitive authority of mainstream scientists. More recently, Kelly Moore has documented the ways in which scientists rhetorically defended their turf by drawing connections between scientific and nonscientific interests (1996). Studies examining amateur scientists have found that the mainstream scientific community has gradually usurped or co-opted outsiders attempting to do science and that the boundaries between outsider and professional scientists serve the interests of conventional scientists. For example, the professionalization of French economists is said to have happened when modern practitioners overtook the practice from amateur aristocrats and organized as professionals in order to draw an income (Mulkay 1980). Likewise, in Britain, amateurs were permitted to remain meaningfully involved in the field of geology only until professional geologists no longer needed their financial support (O'Connor and Meadows 1976). Professional astronomers are said to have kept amateur astronomers involved in mainstream astronomy only to assign them mundane tasks involved in furthering professional astronomers' research agendas (Rothernberg 1981).

²See also Ben-David and Sullivan 1975; Knorr-Cetina and Mulkay 1983; Latour 1987; Latour and Woolgar 1986; Lynch 1985; Shapin 1995.

Reskin 1976, 1977; Xie 1998) rather than on disenfranchised researchers and those positioned outside the boundaries of conventional science.

Most analyses point aptly to the ideological power of mainstream professional scientists (after all, science, even in Kuhn's definition, is what happens under mainstream research trajectories), but they do not account for researchers located outside the conventional scientific community—researchers like ufologists—who make and spread bodies of knowledge that are accepted as wholly scientific in audiences of their own cultivation. Several independent research communities exist. These groups, ignored or exiled by mainstream science, include researchers of cold fusion (Simon 1999); parapsychology, paranormal metal bending, and psychokinesis (Collins and Pinch 1982); phrenology (Gieryn 1999); and, of course, unidentified flying objects (Ben-Yehuda 1985). These “sciences” have survived to varying degrees as sources of credible scientific claims for some audiences despite their rejection by and exile from conventional science, their failure to employ conventional scientific methodologies, and their rejection of much of the conventional scientific canon.

How should this be understood? Reminiscent of Michel Foucault's connection between cultural language and power, more recent scholarship outlining definitions of scientific power provides certain explanatory hints. Scholars have noted, for example, that language and rhetoric are key to understanding the power of conventional scientific practice. Richard Brown understands scientific authority as being based at least partially in narrative (1998). Correspondingly, Pierre Bourdieu grounds authority not in pure research, but arising instead from agents' capacity to speak in a way that conveys legitimacy (1999).

Throughout its ups and downs, the development of the UFO research movement is a story, first of a lost battle for a place within the scientific establishment, forced exile from the mainstream scientific community, and, finally, the construction of a successful rhetorical and cultural strategy that uses science to garner legitimacy in the eyes of lay followers.

A BRIEF HISTORY OF UFOLOGY

Since its inception, ufology has fought for a place inside the scientific establishment. In the early days of modern UFO research ufologists had some success. In the late 1960s, UFO enthusiasts were, in fact, involved in the official scientific investigations led by astronomer Edward Condon of the University of Washington and the U.S. Air Force. Ufology's slide into exile began with the Condon Project's conclusion that there was no basis for continued scientific study of UFOs. Condon concluded that most UFO reports could be explained as conventional phenomena (airplanes, birds, stars, etc.) and were, therefore, not spacecraft from another world. The Condon Report, printed in paperback, has sold hundreds of thousands of copies. The report's proclamation that UFOs were not worthy of further

scientific study was devastating to the movement, many ufologists say. Others are quick to add that the Condon study also galvanized members of the UFO research movement and alerted them to a host of problems that persist in the mainstream scientific community, including, they say, intolerance for things that do not fit the prevailing paradigm and a “herd” mentality in science (Denzler 2002; Hall 1999).

Ufologists appear to be constantly concerned about their credibility, and they use many rhetorical strategies to establish it. The strategies fall loosely into four categories. The first involves emulating mainstream science, framing the study of UFOs as an ordinary scientific specialty. The second strategy promotes an accessibility of science to nonscientists and focuses on getting the findings of UFO research—and scientific understanding in general—into the hands of as many people as possible. It also involves including amateurs and laypersons in the research process. The third approach presents ufology as an improvement over conventional science in terms of both methods and findings. The fourth approach rejects scientific logic in favor of different, thoroughly unconventional processes of learning that include telepathy, intuition, and the use of aliens as informants.

STRATEGY 1: EMULATING MAINSTREAM SCIENCE

By packaging and disseminating their findings as products of science, ufologists have set up a parallel realm of scientific authority—a shadow science that is not sanctioned by conventional science, but is presented as scientific nonetheless. Following this approach, ufology’s exclusion from science is downplayed. Similarities to conventional science are showcased, as are any affiliations with conventional scientific institutions, however minor. While ufologists’ claims about UFOs and space aliens are in most cases outside the realm of conventional verification, they are still framed as having the full weight of scientific proof behind them. Despite the difficulties involved in making systematic observations of their subject matter, ufologists have collected a significant amount of what they call “empirical data” on UFOs and related phenomena. Ufology is a science that tries to explain not just UFOs, but seemingly everything. They have assembled a comprehensive body of “scientific” theory centered on UFOs, a set of facts and principles that adherents say explains most of what needs explaining about the universe—including the genesis of mankind, the meaning of the Bible, and the origins of the Sony Walkman—in one complicated fell swoop.³

³Ufological theory explains that planet Earth was full of life before extraterrestrial astronauts altered their own DNA, mixing it with lower primates’ to create humans: a slave race destined to build the Great Pyramids, Stonehenge, and other projects for extraterrestrials’ secret purposes. The heavens, believers insist, are central to all world religions—especially the Judeo-Christian tradition—because alien spacecraft come from the sky. Moses received commandments on a mountaintop (a UFO landing pad?); lights in the sky (UFOs?) led wise men to Christ’s cradle. Extraterrestrials have returned throughout human history, teaching early humans to harness fire, seed crops, and manage the flow

Although its research program does not fit the conventional scientific model, ufology uses the rhetoric and style of mainstream science to present itself as a wholly scientific undertaking, convincing adherents that the methods ufologists use are scientifically sound and that the knowledge produced within ufology is scientifically certified. To accomplish this, ufology draws on at least three key features of science: It uses what adherents insist are empirical methods; it espouses a body of knowledge its practitioners have labeled scientific; and it is carried out in a network of researchers that is modeled after a scientific specialty. As ufologists pursue credibility and respectability, they draw upon each of these signifiers of science, labeling their practices “empirical,” “scientific,” and “expert” synonymously, directing their efforts towards convincing members of the lay public rather than mainstream scientists.

The terms “ufology” and “ufologist” hint at ufologists’ efforts to market their pursuits as legitimate and credible and ufology as a bona fide profession. Framing their work as one among many “-ologies” allows UFO researchers to both present themselves to the public as professionals and to define ufology as an ordinary scientific specialty. Despite the difficulties involved in building a professional research specialty around the study of objects that are by definition not yet identified, ufology has made ambitious efforts to do just that. Inside the ufological community, science and empiricism are discussed frequently, including concepts such as double-blind tests, replicable experiments, documentation, and evidence. The concepts of empiricism are used loosely—often in once-removed fashion. “Empirical data” comes, for example, through interviews with and hypnotic recollections of self-described alien abductees (Howe 1998; Jacobs 1998; Mack 1994). The recorded transcripts of such sessions are then regarded as scientifically obtained data, transformed from witness testimony into a scientific record that can be corroborated and correlated, and from which scientific proof is derived. UFO researchers routinely defend such unconventional research techniques as wholly empirical and scientific.

While ufology takes pains to insist that it is a science, its practices deviate sharply from the norms of mainstream science. The “empirical grounding” so often emphasized by UFO researchers lies in data collected under nonexperimental conditions, by laypersons sometimes referred to as “civilian researchers.” French ufologist Jacques Vallee describes the dearth of physical evidence relating to UFOs and makes reference to a cover-up of recovered UFO crashes, lamenting that crash material is seldom available for “independent study.” Vallee then praises “civilian

of rivers. They have returned frequently to check up on humans. In 1947, it is understood, an alien surveillance mission went awry and their high-tech craft crashed near Roswell, New Mexico. Debris from the wreckage was seized by the U.S. government and subjected to “reverse engineering,” a process by which the extraterrestrials’ sophisticated technology was figured out from examining the craft’s machinery and materials, the principles of which were reworked into products like bullet-proof Kevlar, lasers, miniature electronics, and semiconductors (Corso with Birnes 1997; Blumrich 1974; von Daniken 1970).

researchers” who piece together and share UFO evidence in an article entitled “Physical Analyses in Ten Cases of Unexplained Aerial Objects with Material Samples”:

...in the course of their investigations of the phenomenon around the world, civilian researchers acting privately have patiently assembled the embryo of a sample collection, starting from physical specimens reportedly gathered at the site of a close encounter or “maneuver” type sighting (1998, p. 359).

While Vallee suggests that actual physical specimens make up the “sample collection,” the collection is actually made up of eyewitness descriptions of the physical effects of UFOs, which include broken tree limbs at the landing site, crushed grass, and “a variety of electromagnetic effects.” Vallee categorizes UFO phenomena, organizing different aspects in a “classification of anomalies,” for the purpose of “establishing a baseline in comparing reports from various countries or from various epochs.” Vallee’s matrix, which labels and illustrates concepts like UFO “fly-bys,” “reality transformation,” and “close encounters,” presents such phenomena in a dry, scientific-like format (Illustration 1).

Ufology’s science-heavy strategy can be found in many of the UFO community’s books, including Paul Hill’s (1995) *Unconventional Flying Objects: A Scientific Analysis*, wherein Hill explains in detail the mechanics and physics behind UFOs. Drawing from UFO report data as well as his own UFO sightings, Hill claims he is able to determine the power sources of UFOs, their electromagnetic outputs, and their aerodynamic characteristics using an estimation technique he calls “back engineering” which involves the application of deductive logic and engineering principles to descriptions of UFO phenomena. Other researchers practice

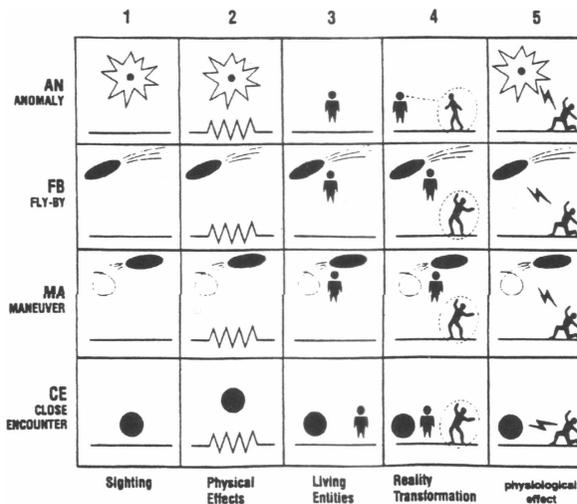
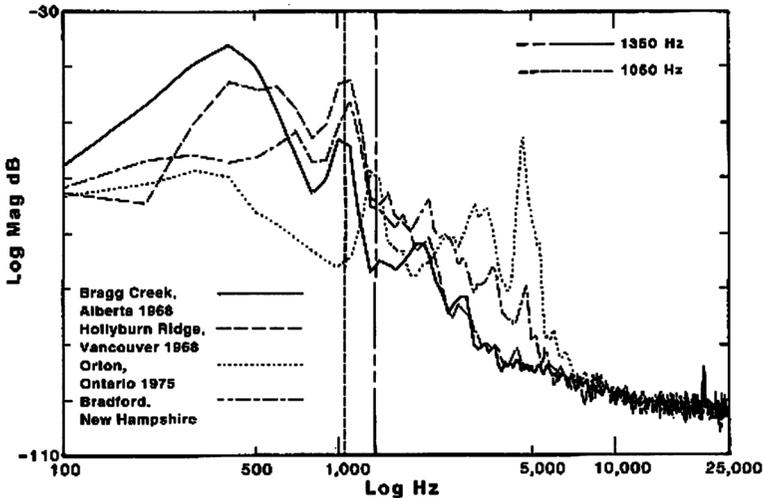


Illustration 1. Vallee’s Classification of Anomalies.

the science of ufology by systematically collecting soil samples at reported UFO landing sites and searching for pieces of UFO wreckage with metal detectors. The noises, sights, and smells reported by witnesses are conscientiously recorded by a far-flung cadre of UFO researchers and are then compared side by side with the testimony of others and rolled into research studies published in journals modeled after those of a scientific specialty. Presenting the results of one such study, *The UFO Journal* ran a cover with a picture of a jagged line graph that read, "UFO Sounds Analyzed." The estimates presented on the scientific-looking graph were derived from witness recollections. Somehow researchers estimated a decibel level from each witness account and the study's author presented these as systematic observations (Illustration 2).

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UFO SOUNDS ANALYZED

Illustration 2. MUFON Journal Cover: "UFO Sounds Analyzed."

The Annual Symposia of the Mutual UFO Network (MUFON), the largest self-described scientific UFO research organization, have since their early days articulated their commitment to science and scientific methods. The theme of the 1976 symposium was “New Frontiers in UFO Research” and featured talks on “Ufology and The Digital Computer: A Lesson in Evaluation of UFO Secondary Evidence” (Stanford 1976) and “Analysis of Humanoid Reports” (McKay 1976). The following year, MUFON chose for its symposium theme “Scientific UFO Research: Position of the UFO Movement on Our 30th Anniversary.” It included a presentation on “The Scientific Method of Investigating UFOs” (Warren 1977). Two years later, MUFON’s symposium was titled “Intensifying the Scientific Investigation of the UFO Surveillance” (MUFON 1979). The 1983 symposium featured research presentations conceived of as scientific, including one entitled “A Scientifically Based Analysis of an Alleged UFO Photograph” (Haines 1986).

The cover of the 1995 symposium’s proceedings captures several aspects of ufology’s self-presentation as a science. First, it simply declares that ufology is a science: its title reads “UFOLOGY: A Scientific Paradigm.” It also features a variety of numbers and circles, vaguely suggestive of controlled experimentation and science, and depicts a white-lab-coated scientist processing something in a laboratory (Illustration 3).

From its origins as a loose network of independent researchers, ufology has grown into an extensive set of organizations that are framed as scientific research centers and institutes (Blevins 1996). Within this organizational framework there is a well-honed publicity machine that serves as a mouthpiece touting ufology’s credibility. Despite the fact that many UFO organizations and UFO researchers do little in the way of actual research, the UFO research community persists organizationally, as well as rhetorically, in selling ufological practice as an institutionally based scientific profession. It has its own academic-style conferences, peer-reviewed journals, awards, honors, credentials, publishers, and a comprehensive intellectual canon.

At least 350 organizations devoted to UFO research operate across the United States. Some, like the UFO Study Group of Greater St. Louis, meet regularly and publish a modest journal. Others, like the New Hampshire Mutual UFO Network, of Rye, host major conferences, conduct public information campaigns, and sponsor UFO investigations. Many UFO research organizations, like the International Center for Aerial and Abduction Research of Goffstown, New Hampshire, study UFOs along with other topics. Other groups, such as the Fox Valley UFO Discussion and Support Group in Menasha, Wisconsin, provide support. Some groups, such as the Center for the Study of Extraterrestrial Intelligence of Asheville, North Carolina, or the Area 51 Research Center of Rachel, Nevada, study specific aspects of the UFO phenomenon. Some sound all-encompassing, like the UFO/ET World Museum and Scientific Research Library of Trenton, the National UFO Reporting Center of Seattle, and the United States UFO Information and Research Center

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Illustration 3. MUFON Journal Cover: “UFOLOGY: A Scientific Paradigm.”

of Johnson City. Many publications cater to the amateur researcher, including Lockwood, Missouri’s *Amateur Ufology News*.

In terms of membership, the largest UFO research organization is the Mutual UFO Network, established in 1969. According to the mission statement posted on its Internet site, MUFON, Inc. is “composed of people seriously interested in studying and researching the phenomenon known as Unidentified Flying Objects (UFOs).” MUFON encourages “concentrated scientific study” by “dedicated investigators and researchers” (MUFON 2003).

MUFON has chapters in nearly every U.S. state and in countries around the world. It publishes a monthly journal, examines and certifies UFO investigators, and organizes annual symposia. Its headquarters in Littleton, Colorado

serves as a data clearinghouse where the paperwork resulting from UFO reports investigated by MUFON members are stored. Another self-described scientific organization, the Chicago based Center for UFO Studies (CUFOS), describes itself on its Internet site as an “international group of scientists, academics, investigators, and volunteers” who analyze the UFO phenomenon. The organization’s mission since its founding in 1973 has been to “promote serious scientific interest in UFOs and to serve as an archive for reports, documents, and publications about the UFO phenomenon.” CUFOS receives UFO reports on its telephone hotline and investigates and compiles data on UFO sightings (CUFOS 2003).

Another means for framing ufology as a science is found in UFO journals, most of which assert the scientific grounding of UFO research. Carefully modeled after mainstream scientific publications, many have histories spanning several decades. One such journal, *The Flying Saucer Review*, published in England since 1955, is produced, its mission statement claims, “with the collaboration of a team of more than seventy experts and specialists from Britain and twenty other countries. . . They include numerous Ph.D.s, doctors of medicine, astronomers, physicists and other scientific experts.” *Flying Saucer Review*’s American competitors include the *Journal for UFO Studies* (JUFOS), established in 1970. The publishers of JUFOS claim that the journal is a “refereed scientific journal dealing exclusively with the UFO phenomenon.” Another prominent UFO research publication is the monthly *UFO Journal*, the official publication of the Mutual UFO Network, which has a paid circulation of over 10,000. Published since 1969, the *UFO Journal* features articles written by leading ufologists alongside summaries of current UFO sightings. A broader publication that regularly features UFO research is *The International Journal for Scientific Exploration*, which publishes articles on UFO phenomena and other fringe science topics. It was established, its mission statement says, to offer a professional forum for the presentation, scrutiny, and criticism of scientific research on topics outside the established disciplines of mainstream science.

The UFO community emphasizes “scientific training” in its activities and discourse. Such training results in titles and credentials that, though almost never applied to full-time, paid researchers, make them sound like professional research positions. An important and sought after title is “Field Investigator,” which requires training with local MUFON groups, an apprenticeship, and the passing of a written examination administered nationally. For the past twenty years, ufology’s methodologies have been spelled out in the *UFO Field Investigator’s Training Guide*. It explains the methodologies used in performing UFO investigations (Spencer 1995). The 304-page work is subtitled “An Introduction to Methodologies, Techniques, and Scientific Disciplines for Performing UFO Investigations in Support of the Mutual UFO Network, Inc.” In its “Science and Philosophy” section, a full chapter is devoted to scientific methods, including sections on “repeatability and testability,” “hypothesis and theory,” and “steps in the scientific process.” Advice

is provided under the heading “Steps of the Scientific Process”: “Design controlled experiments to observe the behavior of the aspect being investigated”; “execute the experiments and note the effects that relevant stimuli have on the behavior of the aspect”; and “test the theory for applicability, repeatability, and correctness.” By way of illustration, the guide advises the following for determining the “effects of stimuli” on UFOs:

... if you wanted to know if a supposed UFO would respond to flashing lights (an experiment which has been performed in an uncontrolled environment), you would use flashing lights whenever you observed anomalies and would record their responses, if any. In this case, flashing lights are the stimuli (Spencer 1995, p. 153).

Ufology’s preoccupation with science is evidenced at UFO field investigator training sessions. Lessons presented during a New England two-day training event, for example, were made up of general science and technical instruction (much of which was not directly applicable to UFO research). In a hotel conference room, field investigator trainees were lectured by several UFO researchers who conveyed their particular expertise in, for example, reading topographical maps, using a protractor and a compass, calculating both true north and magnetic north, categorizing clouds, and distinguishing between the layers of the atmosphere.

Even where there is little physical documentation, UFO researchers continue to assert claims of empiricism. By doing this, they both subtly and not so subtly change meanings drawn from mainstream scientific practice. UFO researcher Jack Lapsertis, who explores the connection between UFOs and “Bigfoot” creatures, provided an example of this in a presentation at a UFO research conference. Lapsertis remarked

When people say, “You really believe in UFOs and Bigfoot?” I say no. It’s not what I believe. It’s what I empirically documented using scientific methods (1998).

His “empirical” methods include guarding mystical portals to gather data from time traveling creatures and discussing UFOs through mental telepathy with Bigfoot. Dr. Roger Leir is another example of the flexibility of ufology’s science-style legitimization strategy. Leir, a doctor of podiatry, made a name for himself by removing what he claims are small surveillance devices from the skin of people who think they have been abducted by aliens. Though it never delivers conventional scientific proof, his book *The Aliens and the Scalpel: Scientific Proof of Extraterrestrial Implants in Human Beings* (1998) makes claims of scientific empiricism. These claims are especially visible in the book’s marketing. In a promotional pamphlet for the book, Leir and his former collaborator Derrel Sims write:

We can firmly conclude that some individuals with alien abduction histories have artificially manufactured objects in their bodies of a demonstrably extraterrestrial origin. In short, we now have the “smoking gun” of ufology—hard, physical scientific evidence of a continuing alien presence on Earth!

Similarly, in a 1998 lecture by Sims entitled “Medical and Scientific Evidence of Alien Contact,” Sims told extraordinary anecdotes about his evidence and its collection but stressed its empirical grounding. His lecture began, “The only cases I work on are those with physical evidence. If there’s no evidence, I’m not saying anything.” He continued to present his scientific evidence of abduction, which included the presence of foreign objects in abductees’ bodies and seemingly immaculate conceptions:

Implants. People are getting ’em everywhere. No place is sacred. None. Vaginally. In the scrotum. Deep in the head. . . Another person brought me a sonogram of an alien baby. I took that sonogram to the finest OB/GYN clinic in London for their opinion. I said, “Is there anything wrong with this picture?” They said that no one takes sonograms this way. Sonograms are never done like this. And that’s consistent with the lady’s story! That she didn’t conceive normally! It’s horrifying to have these things happen when they’re not dating and don’t have men around them.

Capitalizing on credibility of science, strategies that emulate science do so selectively. Because ufologists draw primarily on signifiers of science, rather than the substance of scientific knowledge and its methodologies, it appears that ufologists’ efforts are not directed at convincing mainstream scientists of their legitimacy. Instead, the strategy is directed at convincing laypersons. Other strategies mobilize these laypersons to become actively involved in supporting the science of ufology.

STRATEGY 2: UFOLOGY AS SCIENCE DEMOCRATIZED

Some ufologists make the case that people from all walks of life should learn and benefit from science’s findings. This approach frames ufology as a liberation and a democratization of scientific practice. Adherents of this strategy argue that scientific methods are tools that should be accessible to anyone. They encourage wide participation in research and aim to help laypersons understand scientific findings—ufology’s science as well as standard science. UFO researchers of this stripe frequently incorporate science lessons into their speeches and books.

Accordingly, the ufological community provides interested parties many ways to learn about UFOs. Research is compiled into books that are commercially viable and there are abundant public forums (including radio, television, and public engagements) in which ufologists share their findings. The end products of UFO research reach out, not to professional researchers, but to the masses. The masses have reached back enthusiastically. One of the best-selling UFO research books, Erich von Daniken’s *Chariots of the Gods?*, has sold well over 50 million copies. Talk radio has provided a forum for ufologists, most notably Art Bell’s nationally syndicated *Coast to Coast* radio show that routinely focused on UFOs and UFO research. At his peak, Bell was the third most listened-to radio talk host in the United States, with nine million listeners each week (Adelson 1998). Bell retired in 2002 and the show lives on with new host George Noory (Premiere Radio Networks 2003).

At UFO conferences, speakers weave miniature science lessons into their talks, treating their audiences as students of science. Lloyd Pye's addresses, like those of many UFO researchers, convey a large amount of information and provide an educational experience for conference attendees—albeit a strange one. Pye explains the science of basic human and alien anatomy to the crowds he addresses. Describing the skull of “Starchild,” which Pye claims is a five-year-old female alien-human hybrid, Pye remarks:

The neck connector points are in a different place than they are on humans. This is the typical pencil-neck geek. The neck is about a third of the size of a human neck. It's beginning to have all the features that the Grays (an alien race) have. A typical person in this room has a brain capacity of about 1400 cubic centimeters. This person had a capacity of 1600 cubic centimeters. And at age five, that is pretty phenomenal (1999).

After his talks, Pye sets up a table outside the lecture hall and invites everyone in the audience to examine the skull for themselves. Like Pye, most of the UFO research movement's researchers are approachable and willing to help beginners get educated in UFO phenomena and become involved in UFO research organizations. Many ufologists print their contact information on their books and videos. One individual shared the story of his initiation into the world of UFO research after contacting an international UFO expert:

I called Stanton Friedman. I bought his video in a store and I really liked it. I turned the box around and got his number off the back and I called him up. And we talked for like two hours about all kinds of stuff. So after that, I would call him every so often—every two weeks or so—and he would tell me which books to read and we'd talk about them and after awhile he said to me, “You are ready to join a group,” and he sponsored my application to The Mutual UFO Network. He called the national president and he called me. Two months later, I'm the director of my own state MUFON chapter! I had no idea what I was getting into! And it's two years later and I'm still state director! I love it! (Anonymous, July 4, 1999).

Whether by examining hybrid skulls, conferring with top researchers, or participating in sky watches, lay participation in all aspects of research is encouraged. Initiates are often quickly encouraged to become field investigators and participate at the leadership level. Ufology encourages lay participation in fact finding in all types of scientific research and it is frequently asserted that “everyone can be a scientist.” Strict divisions between expert and laypersons are absent in ufology, where even newcomers are invited to share their knowledge and insights. In his welcoming remarks, the organizer of The UFO Experience conference stressed audience participation as a critical component of the conference's proceedings:

The UFO Experience is a forum for public education. If you want to challenge a speaker, that's okay. You are encouraged to probe as deeply as you wish. We want to get at the truth (White 1998).

The co-heads of the Connecticut based UFO Research and Study Organization (UFORSO), like many others, stressed the importance of lay participation in their conference address.

Our members want to be out there discovering and we introduce our members to that (Brooks and Dorazio 1998).

They encourage would-be witnesses to come forward and fill out a report with UFORSO, saying, “We have compelling testimony given by sane, reliable witnesses. We encourage others to come forward. Most sightings go unreported—let’s change that” (ibid.).

UFORSO’s report on three years of Connecticut UFO activity was put together, they said, for public consumption and to make people more aware of UFO activity and to encourage involvement in research. After their talk, George Fawcett, an audience member and prominent UFO researcher, made a plea for greater participation. Speaking into the cordless microphone that was passed around the audience after each talk (another form of popular participation common at UFO conferences) Fawcett said

I just want to say that . . . grassroots research efforts should be encouraged. There is lots of work to be done. It’s a big swimming pool and the water is very warm. I’d like to encourage everyone to jump in (1998).

UFO conference audience members are frequently invited to contact UFO researchers. During Marianne Horrigan’s lecture, an audience member raised his hand and said that the drawings of a spacecraft she had shown were “very familiar” to him. Horrigan responded with an impromptu invitation for research collaboration. “That’s very interesting,” she said. “We’d like to get your name and talk to you.” Another audience member chimed in with his interpretation of the drawings:

I recognize the principle of stored energy in those drawings. That is second only to the discovery of fire. In 1904, we coined the term “superconductor.” Cold fusion and superconductivity are both represented in those drawings. Pure clean energy. What kind of political, social, economic—what kind of cultural impact would that have? What kind of evolutionary step would that be?

Horrigan also invited this man to contact her research team. “I’d like to get your name. Have you been in contact with Phil? Or his senior scientist?” she asked (Horrigan 1998).

Other UFO researchers provide practical advice about how audience members can conduct scientific UFO research at home. Darrel Sims told a crowd to look for subtle signs of UFOs and alien visitations. They can show up in the background of photographs even when they are not observed by the untrained eye. He said, “Examine old photos. If you feel you have been observed, you probably have. You may already have your evidence” (1998). Sims also asked UFO investigators in the crowd to contact him when they find phosphorescent “alien fingerprints” (one of his specialties) on abductees.

A storehouse of research advice can be found in the hundreds of books and articles that make up the UFO research literature, including how-to titles such as “Hypnosis Procedures for Exploring Memories of UFO Experiences” (Chapin, Parnell and Sprinkle 1986) and “Hypnotic Time Regression Procedures in the

Investigation of UFO Experiences” (Sprinkle 1977). David Jacobs, an alien abduction researcher who collects data by hypnosis, teaches crowds that they too can hypnotize abductees and collect data on abductions:

Most of the knowledge we have comes from hypnosis. Everyone in this room can be a hypnotist simply by proclaiming yourself so. That’s the only course you need (1999).

It is often stressed at UFO research conferences that lay people who do not become official UFO researchers can still offer input that is valuable to ufology. In conference speeches, UFO researchers frequently reference ordinary people who have seen UFOs or who have been abducted, emphasizing that ufology draws mainly on lay informants for its data. Darrel Sims, for example, always includes the stories of many people who have come to him with implants they say were installed by aliens. Sims describes the female victims as hysterical and frantic when he came to their rescue, but their accounts provide useful data nonetheless. He said

I’ve seen implants come from a lady’s eye. A chunk fell right out of her eye. It was egg-shaped and I think it housed a biological camera. I came to her, and she was crying, “WAAAAA! GET IT OUT!” I was getting deaf, so I said, “Crying is not going to help.” I gave her a post-hypnotic suggestion and she attacked the intruder—the alien. Tore his eye cover off. [He showed an illustration of alien with his eye patch torn off and blood gushing.] Now, that is not blood. It’s probably 10W-40 motor oil. Do not think of these as humans. They are not humans. That’s just an eye patch anyway. It’s not his eye (1998).

Other UFO researchers stress the importance of vigilance and solidarity for everyone interested in the quest for truth about UFOs. Astronaut-turned-UFO researcher Edgar Mitchell told a conference crowd to continue carrying the torch for UFO research:

Hang on to what you believe. Don’t be too talkative, but we must also break the veil of secrecy. I’m convinced that the smoking gun evidence exists (1998).

One angle of this strategy of popularizing science is the idea that everyone can learn from science. The findings of ufology, as well as mainstream science, are made available to everyone—not just in specialized journals but also in public forums where ordinary people can hear about what is happening in the world of ufology. This approach draws on the interests of people who have an interest in UFOs and general science. It appeals to those seeking to educate themselves in an informal manner. Another angle of this strategy is the notion that everyone can participate in conducting scientific research. Within the world of ufology, everyone is encouraged to help collect data. Individuals can train themselves with the vast universe of books, journals, and conferences. They can enroll in formal training offered by several UFO research organizations and then become servants of science. Still, like its effort to become an ordinary science, most of ufology’s populist ventures into science are somewhat more symbolic than actual. For example, laypersons can earn field researcher credentials but often do very little in

the way of research. They can read UFO books and journal articles but there is little actual scientific expertise to be communicated.

While ufology's democratizing strategy charges mainstream science with being elitist, for the most part the strategy accepts conventional scientific practices as valid and draws on the style of conventional science for legitimacy. The approaches described so far are generally sympathetic to conventional scientific research. Other approaches take a more hostile stance, arguing that ufology's enterprise is not simply superior to but categorically different than mainstream science.

STRATEGY 3: PRESENTING UFOLOGY AS MORE SCIENTIFIC THAN CONVENTIONAL SCIENCE

Ufologists critique the practices of conventional science as frequently as they emulate them. Charging science with hypocrisy, ufologists point to strict scientific principles—most centrally, the scientific method—and provide examples of conventional scientists' departure from their ideals. Ufologists often claim that the products of ufology are more honest, more objective, and more truly scientific than those of conventional science. Ufologists are portrayed as the true and proper guardians of scientific truth. Likewise, the “scientific establishment” is viewed as the enemy because it hides the truth about UFOs and other “anomalous phenomena” by ignoring observational data on mysterious celestial objects. According to this view, the process of science is misguided, wrong, and corrupt—not something to be emulated. Along with a specific UFO-related critique of science (focusing on astronomy and other disciplines that ufologists say misunderstand UFOs), there is also a general critique that dismisses all mainstream science as deeply flawed.

The support base upon which this strategy rests includes people who are disenchanting with science and who wish that the scientific establishment would choose different goals in its pursuit and application of knowledge, as well as those who have tried but have not succeeded in securing a career in the conventional scientific community. Defending ufology's stature as science, ufologists frequently discuss the challenges faced by ufology in its effort to become accepted as a scientific discipline. They complain of “corruption” in the way science is funded and in the difficulties they face in competing for funding with conventional science. One ufologist expanded on this, stressing the extent to which intellectual progress is hampered:

If you are doing something new in the sciences you cannot get funding. If you talk about UFOs you are out. This needs to change before we can get anywhere (Anonymous, spring 1999).

Others point to the discrimination faced by UFO researchers and witnesses. An article in *The International UFO Reporter*, for example, laments the obstacles

that encumber UFO research:

Clear documentation exists to show that important groups of people are inhibited by the ridicule factor from reporting their sightings or participating in open scientific study of UFOs (1998, p. 18).

Promoting their own version of the facts, ufologists often attack the canon of mainstream scientific knowledge, including fundamental tenets established by Darwin's and Einstein's work. In his book *Everything You Know Is Wrong*, Lloyd Pye argues that conventional science (particularly Darwinism) is incorrect (1998a). Complex life forms did not develop on Earth through evolution, Pye claims. Instead, life was brought to planet Earth with the help of extraterrestrials. He explains his views in detail on his Internet site in his article "Essay on Carpenter Genes":

What all this means, of course, is that everything we think we know about how life develops on Earth is flatly wrong. It means all of our "experts" are totally mistaken when they tell us that Darwin's theory of gradual mutations has led to the development of all species of plants and animals on the planet. Nothing could be further from the truth. Darwinism cannot work now, it has never been able to work, and the time has come for its supporters to stop their drawing boards to seek a more plausible explanation for what is surely life's greatest single mystery (1998b).

Pye is not arguing that the idea of science or the scientific method is wrong. He rails against what he and many other ufologists view as sanitized, bureaucratized, and "convenient" understandings of nature's workings, which he claims originate in the mainstream scientific community. Like other ufologists, Pye undercuts the authority of conventional science, supplanting it with ufology's unique expertise.

Challenging mainstream science's legitimacy, UFO researchers routinely accuse government and university based scientists of bias, corruption, and ineptitude. Ufologist Joe Lewels, like many others, believes that conventional science is bogged down with falsehoods that grow out of its "dogmatism." He told a UFO conference audience:

Science makes us think the universe is organized in a linear fashion, like Darwinism, and the idea that humans evolved from the muck and brine and some lightning bolt of energy. DNA with something like a billion instructions—the formation of the double helix. It's easy to believe that we are the epitome, the kings of the hill, the top of the food chain and that we are superior. That's a seductive argument. That's also a great falsehood that needs to be reexamined. The scientific paradigm provides a convenient and simplistic world view, but one that is false . . . If you have adopted an atheistic, scientific, materialistic world view, life is a lot simpler. But you have to be willing to cross that line. You have to understand that there is a nonphysical realm (1998).

According to Lewels, some conventional scientific fields are built entirely on false assumptions and scientific world views will crumble under the increasing weight of evidence of the paraphysical. One of the more vocal of ufology's critiques of science is the charge that conventional science is not "scientific." In a chapter entitled "Science Is Not Always What Scientists Do," ufologist J. Allen Hynek rages against The Condon Report, which recommended no further scientific

studies of UFO phenomena. According to Hynek, mainstream scientists do not always follow science's methodologies. In the case of the Condon investigation, conventional science's practitioners had already made up their minds that UFOs were not a serious problem before they even began their study, Hynek said. He charged that their results reflect that bias rather than the data and that the investigators abdicated their duties as scientists by simply labeling UFOs as explainable phenomena:

Scientific method! What sort of scientific investigation is it that assumes the answer before starting? The assumption here is clearly that UFOs are all misperceptions of natural things and that the entire work of the committee was to learn and memorize the varieties of natural stimuli for UFO reports so that all one needed to say was, "That must have been Venus; that one must have been an airplane landing light." There was no room in the Condon concept of the problem for even the possibility of the statement: "That was probably a UFO" (Hynek 1972, p. 231).

Similarly, researcher Erich von Daniken, author of *Chariots of the Gods?*, in a chapter entitled "The Improbable World of the Unexplained," writes that research and progress are held back by mainstream science's stubbornness. Comparing the scientific age with the reign of the Church's persecution of progress-minded scientists, von Daniken claims that it is still difficult to uncover the truth. Old persecutions, he says, have been replaced with new pressures that are just as effective in impeding intellectual progress:

Things have become easier, one thinks. There are no more anathemas and fires at the stake are no longer lighted. The snag is that the methods of our time are less spectacular, but they are hardly less obstructive to progress. Now, everything is more "civilized" and there is much less fuss. Theories and intolerably audacious ideas are hushed up or dismissed by such killer phrases as: It's against the rules! (Always a good one!) It's not classical enough! (Bound to impress!) It's too revolutionary! (Unequaled in its deterrent effect!) The universities won't go along with that! (Of course. But were they successful!) We can't see any sense in it! (And that's that!) (1970, p. 29).

Some ufologists charge conventional science with more than failing to face the truth. Ufologist Michael Cremo, for example, co-wrote a book called *Forbidden Archaeology* in which he accuses science of actively hiding data through a process of "knowledge filtration," whereby science ignores and hides evidence that contradicts its findings (Cremo and Thompson 1993). Cremo spoke at a conference sponsored by the New Hampshire chapter of MUFON. Citing evidence of human bones found in geological strata where, according to mainstream science, they do not belong, Cremo said repeatedly, "I'm convinced that archaeologists have buried as much evidence as they have taken out of the ground." Cremo showed the crowd a slide depicting a time-line of the conventional scientific understanding of humankind's development juxtaposed with his own time-line, based on evidence from anomalous cases and ancient literature:

The writing of ancients—in Sanskrit—tells us that in ages past there were intelligent ape-like creatures on this planet. Alongside them were humans . . . Of course, that's quite different from the story we'd hear from Darwin and his modern-day followers . . . I look for physical

evidence. Of course, I didn't find that evidence in current textbooks of archaeology. I did eight years of research . . . Why don't we know about this evidence if there is so much of it? This is what I call a process of knowledge filtration. We live in a knowledge culture. The fixed ideas of the scientific community are the filter. Research that goes with the fixed ideas filters through easily. If they happen to go against the fixed ideas, they are ignored. Set aside. Forgotten (1998).

Similarly, in the late 1960s, UFO researcher Stanton Friedman testified before Congress that certain mainstream researchers looking at the UFO question "have made strong attempts to make the data fit their hypotheses rather than trying to do the much more difficult job of creating hypotheses which fit the data" (Fuller 1969, p. 217).

Like the ufologists they come to hear, many who attend UFO conferences share the view that mainstream science is misguided and that ufology is a superior source of information. One attendee stated that mainstream science has "much too much power," adding that "the people—the taxpayers—deserve the power. After all, we're paying for it." Others criticized science, claiming: "Science is helpless in any new discovery"; "if science knows the truth, they are hiding it"; and "like any other established group, science affirms its historical standard while trying to seek truth." Another added that science "has often turned into scientism and a refusal to consider any data outside the scientists' world views."

In the ufological community, the institutions and researchers of conventional science are often described as bias-bound purveyors of outdated belief systems. For example, Lloyd Pye compared current scientific views with outdated scientific paradigms which in their day were undisputed. In his "Life's True Beginnings Essay," he complains that science disseminates a set of beliefs as though they were hard facts:

It reaches a consensus about a set of assumptions in a field it has not fully mastered. Then those assumptions are believed as dogma and taught as facts until the real facts become known. Sometimes such consensus "facts" endure for a short time . . . while others endure like barnacles on the underside of our awareness (1998c).

Much of the activity at UFO research conferences, including both speeches and informal conversations, focuses on the shortcomings of conventional science. Many speakers who do not even address the subject of UFOs are invited to UFO conferences so long as they articulate a ufology-like critique of mainstream science. Hence, there is sometimes a focus on topics other than UFOs, for example, the "persecution" of "new science," and research deemed unfairly dismissed by mainstream science, including cold fusion and the healing powers of prayer. Ufology's critique of science is not limited to the agencies and disciplines that produce knowledge about space. Instead, ufology serves as an organizational epicenter from which to critique many general aspects of mainstream science.

According to ufologists, there are good reasons why an all-encompassing critique of science has come together around the study of UFOs. Many ufologists claim that the weaknesses and biases of science become clear around the case of

UFOs. Ufologist Jacques Vallee, for one, claims that scientists react emotionally and incompetently to UFOs in a way that reveals their biases. In his book *Anatomy of a Phenomenon: UFOs in Space—A Scientific Appraisal*, Vallee writes:

Men of science react to UFO reports in a very peculiar fashion. They go so far as neglecting to conform with the basic rules of scientific honesty when confronted with this problem, and they allow themselves to act as they never would in the presence of a more classical mystery (1965, p. 121).

UFOs, it is said, serve as a litmus test of honest scientific inquiry—and conventional science fails. Ufologists are galvanized around the belief that conventional science is misdirected and that their work is superior. The critique of conventional science present in ufologists' work is mirrored in the views of many students of ufology. Many UFO conference attendees with whom I spoke expressed negative opinions of conventional science. One conference attendee remarked:

Science today—in the mainstream, that is—is extremely close-minded. Say, for example, you were a university scientist and you saw a spaceship. You saw it with your own eyes. Maybe even your wife or your buddy saw it with you. You couldn't admit it! You would lose your credibility! Completely! But you would still know you saw it! And the truth is, scientists see strange things every day and don't report them. They just put up the wall. Some of them certainly see UFOs and just block them out, but on a more mundane level they see anomalous phenomena—both in their work and elsewhere—and there is extreme professional pressure to ignore it. Most of them would rather preserve their careers than pursue truth (Anonymous, March 17, 1999).

Along with many other ufology supporters, this man showed a strong interest in the scientific dilemmas posed by UFOs—a topic he favored above straightforward UFO research.

Sure, the slides and all the evidence is good to see. But like a lot of the people here I'm most interested in the deeper meaning: What prevents us from finding out the truth about UFOs? What happens if we—if scientists—open our minds to all possibilities? It's only then I think that we'll really get to the bottom of this, but UFOs sure meet resistance in a lot of corners—including science, which refuses to see what is often right in front of its face (ibid.).

Other ufology supporters volunteered critiques of mainstream scientists. “A close-minded bunch of self-promoters,” said one (Anonymous, March 13, 1999). “They're too caught up in the prevailing paradigm to see what's really going on,” said another (Anonymous, June 4, 1999). Others offered similar estimations, using words like “rigid,” “blind,” and “theory-bound” (Anonymous, April 24, 1999; Anonymous, June 16, 1999; Anonymous, June 17, 1999). Harsher critiques include charges that mainstream scientists heed “materialistic, monetary motivations” and that mainstream forums for “pure” research do not exist (Anonymous, November 8, 1998; Anonymous, October 10, 1998).

Some ufologists call for specific changes in UFO research methodologies to make them more “empirical” (if less classically scientific). At the 1999 MUFON Annual Symposium, a ufologist argued for better “empirical” methodologies that

make use of female intuition as well as “the alien orchestrated human bonding dramas, relationship manipulations and love obsessions that are carried out in the abductee population and mediated through the alien presence.” Her speech began with an appeal for more thorough data collection in her specialty of UFO abduction research. She criticized the “nuts and bolts” style in which some UFO researchers engage, she says, in pursuit of professional credibility rather than truth:

Alien abduction research has struggled to maintain credibility in the UFO community and academic world. The paradoxical nature and lack of concrete physical proof of extraterrestrials thrust UFO abduction researchers into the need for taking greater efforts in empirical methodologies—in essence, to take a hard-line, nuts and bolts approach. As an abduction researcher of fifteen years and from the perspective of female intuition, I contend that most ufologists and abduction researchers are so adamant about the nuts and bolts that they overlook the whole drama of what is taking place in abductees’ lives (Lorgen 1999).

Whether they are attacking conventional scientists or researchers who apply conventional methods to ufology, the underlying argument is that the ideas advanced by science are misdirected and that ufology is more reliable in producing truth claims and is therefore more legitimate than conventional science. There is a related camp of ufologists that go even further. They insist that truth is delivered in many ways—through means that science wrongly rejects.

STRATEGY 4: REJECTING CONVENTIONAL SCIENCE IN FAVOR OF “IMPROVED” FORMS OF INQUIRY

Some ufologists point out that the nonphysical dimensions that are routinely reported in tandem with UFOs (such as mystical portals to other time-space locations) cannot be observed by traditional scientific approaches. Therefore, they argue, anomalous phenomena must be understood through other means: direct and indirect communication with aliens, “thought manifestation,” intuition, revelation, meditation, etc. These approaches are sometimes termed “science,” which is employed in support of seemingly magical things. Other times, researchers expressly reject the notion of scientific inquiry, citing the superiority of other approaches. A common argument is that people should find their own answers rather than have scientific experts tell them what to believe. It is argued that common sense, intuition, and personal testimonials should be considered as credible sources of information. UFO conference speaker James Gilliland (whom a conference program described as “minister, counselor, energetic healer, and frequent guest on radio and TV shows”) stressed that people should look within for answers to all questions:

It’s not me. I’m not really that important. What’s important is within you. Not your guru!
You are your own teacher. The god—the goddess—is within you! (1999).

Audience members made affirmative comments, like “Uh-huh!” and “Yessssss!” and “That’s right!”, giving the presentation the feel of an evangelical sermon—a

feeling enhanced by the speech's content:

With an open mind and a loving heart, we are able to see the creator in all of creation . . . When we eat an orange, we eat the meat and spit out the seeds. Now, how do you know what to eat? Which are the seeds and which is the meat? (He puts his hand over his heart.) It's here. (ibid.)

"Yesssss!" replied the crowd. Guilliland then turned his lecture to science, talking about physics, vibrations, consciousness, and a wide variety of UFOs. Enthusiastic audience members nodded and gasped along with him:

The latest theory in physics is super string vibration. Essentially, everything is a vibration. That's funny, cause emotions have a vibration . . . A strong reverence for the creator is in every person. When we try to expand our minds, we're going to be struggling with our old belief systems. Our boxes (ibid.).

Some ufologists explicitly defend the integrity of personal testimony and witness narratives in UFO research. Many speakers at UFO conferences have talked about what they say are negative consequences of science's rejection of personal testimonials. One researcher, for example, claimed that the "consciousness" of ordinary people is superior to lab equipment of mainstream scientists in collecting UFO data:

We shouldn't refuse human testimony. We need indication of respect—to listen to testimony and not refuse it just because it doesn't fit into a narrow-minded view. We need a science that is based in experience. Your consciousness is better able to catch information than any man-made technology. Scientists in a lab can't make progress without human experience (Hesemann 1999).

Ufologists have criticized mainstream science for neglecting experience based methods of data collection. Researcher Jack "Kewaunee" Lapsertis stressed the need to practice science outside the norms of conventional scientific practice:

Science needs to start practicing science more experientially. You need to go out and do your own thing and do it for long periods of time to understand the phenomenon. I am an empiricist but also an experientialist and the anomalies are the missing link. We need to revamp the scientific paradigm to include UFOs and telepathy to get closer to the universal reality and the complete truth. Science says that witnesses are unreliable. It's strange then that eighty-three people would tell me the same thing! That's pretty reliable, and with my credentials I've seen some things (1999).

He criticized mainstream science for neglecting UFOs, other dimensions to the universe, and experience based methods of data collection. "We need to revamp the scientific paradigm to include UFOs and telepathy to get closer to the universal reality and the complete truth" (1998). Ufologists collect data in many other unconventional ways. Some claim that they gather data by communicating with aliens in space. Ufologist David Rubien incorporated a slide show of aliens into his presentation and told the audience how aliens travel. He described what different "races" of aliens look like and how to tell the difference between male and female aliens. He said that his information is based on his meditative contact with

extraterrestrials:

How they travel across the universe is that they create an isolation field around the craft, like a high-intensity microwave. That field isolates the craft from any universe—including the one it's in. Then, there's the signature frequency vibration—information from the navigational bank of the craft. Using crystalline materials—they grow these crystals. Then, they remove the field. By definition, the craft must be relocated to a universe that matches their signature vibration and go to that universe. Stick it in the back of your mind for future verification.

In the fourth dimension, physicality looks ghostlike. I'm only gonna tell you what I'm told. They're from 350 years in our future and are the optimum Zeta hybrid. That's all I can tell you. And they are benevolent. They have a feeling toward each other. To see them, you must get into a meditative state, somewhere between the third and fourth dimension. Here's a side view of Estansani aliens [shows slide of an alien]. They have a bigger nose than the Zeta. They have a bigger ear than us. That's a female. How do I tell it's a female? Because of the necklace (1998).

Like Rubien, many ufologists adhere to the principles of “nonlocal information” that draw on things like meditation, hypnosis, dreams, and alien contact. Some ufologists subscribe to the related idea of the “quantum hologram,” which holds that all matter contains comprehensive information about its entire history. Former NASA astronaut Edgar Mitchell told a UFO conference audience:

Matter is here and now. But there's an aspect of its wave form that is nonlocal and carries information that is recoverable. That's why we have intuitive experiences. Inner experiences. Consciousness. You can apply these principles to abductions. They may be real, even while they don't physically happen (1998).

A common claim among ufologists is that conventional scientific practices are inadequate in addressing deep questions about the nature of the universe, human life, and the possibility of extraterrestrial intelligence. Though scientific endeavors provide clues, says Edgar Mitchell, other forms of inquiry are essential:

For ancient questions, scientific explanations are flawed. And cultural explanations are not adequate in a space-faring civilization. Evidence from the Hubble telescope, evidence from all sorts of basic science indicates that we live in a trial and error universe that's evolving in the direction of greater complexity and greater knowledge. At NASA, aliens were a nonsubject. My goal, my mission, is to bring consciousness and material science into common understanding . . . Both mystical and religious experience and scientific dogma have been totally wrong. Our best hope is to use scientific techniques to track phenomena in a nonlocality—in what mystics have called for centuries “the beyond.” New scientists are looking at these phenomena. This is our best shot at it (ibid.).

New scientists and ordinary people alike offer strange and nonscientific proof to demonstrate the validity of UFOs and alien contact. Some abductees point to small marks and scratches on their bodies as proof of their experiences. Others report “missing time.” One man claims his curly hair straightened after he was abducted. Often, ufologists and their followers assert that efforts to fit UFO and alien experiences to the scientific model are misguided. They claim that science should be left behind in favor of larger, better truths. This sometimes leads to reliance on an entirely new sort of logic and proof that adherents say supercedes science. For example, many female abductees report seeing their

alien hybrid children on board UFOs and being asked by aliens to cuddle them. For proof of the reality of these incidents, ufologists point to the strong feelings of attachment abductees experienced while in the presence of the hybrid babies. Ufologist David Jacobs also draws on similarly unconventional proof. When asked by an audience member how abductees can make sense of abductions “any more than my dog can make sense of being taken to the vet,” Jacobs commented:

The alien civilization values form over substance. Women, for example, have been asked to nurse hybrid babies. They have been asked to nurse and were successful when they were not lactating! I know this is the case because I have been sent milk samples in the mail! From women who were not lactating! This topic is eminently studiable. Nothing we’ve seen is beyond our ability to understand. It’s like two plus two equals four. They must have logic somewhere and that’s what we see (1999).

The argument follows that human science cannot competently answer questions about UFOs and aliens. Additionally, it is argued that the information gained through UFO and alien contact transcends science and involves momentous questions of human destiny. Jack Kewaunee Lasperitis explained to a UFO conference audience that most UFO investigations suggest that UFOs come to warn planet Earth and its inhabitants of impending danger:

I spoke at the UFO Experience in North Haven and the theme of all the speakers there was the same: the environment is being destroyed faster than we ever thought it was . . . Doing as I do a tremendous amount of research in the health sciences, I know cancer is on the rise. We’re creating all this ourselves. There is something wrong with the scientist who doesn’t look at this and make some comparative notes . . . The message behind the phenomenon is that we should be preparing for Earth changes. It’s like natural selection under Darwinism. Those close to God will be selected. Those who choose to make sex, drugs, alcohol, power, and greed their driving force will be selected against (1999).

This approach has several goals. One is to promote ways of knowing other than science. Another is to apply those ways of knowing, not to technical problems, but to grand, sometimes moral problems impacting all of humanity.

Considered together, ufology’s strategies offer some evidence that the credibility attached to science is portable, very subjective, and, to a large extent, up for grabs. Without necessarily being able to resolve them, the different strategies within ufology can be interpreted as a response to real tensions in the movement’s goals—tensions, for instance, between the desire to appear conventionally scientific and the need to distance ufology from the scientific establishment that undercut its legitimacy. On one hand, ufology needs to connect itself to scientific methodologies to gain legitimacy for what is often perceived as an illegitimate undertaking. On the other, ufology needs to highlight the differences between its work and that of mainstream science in order to explain why it is not a part of conventional scientific practice. In attempting to emulate and democratize science the first two strategies generally celebrate it. Challenging science on its own ground, they draw on the rhetoric of science but insert a very different sort of content. The

last two strategies—which challenge and reject conventional science—attack the basic notions of science and apply themselves to challenging ideas about it.

Beyond that, ufology uses different combinations of legitimation strategies to fit the different support bases it needs to survive. Since ufology is outside corporate, government, and university support structures, its practitioners have had to cultivate support networks and audiences of their own. Ufology's organizational and cultural strategies reflect its need to draw on various informal sources of support that come from nonscientists: It presents itself as a science to attract interested laypersons. For those who are disenchanted with conventional science, ufology presents itself as something other than science.

Through its critiques of science and its rejection of mainstream science as a legitimate enterprise, ufology sets itself firmly apart from the mainstream scientific community, allowing itself to create an alternative world for the making of scientific claims among special audiences. By discrediting science, ufology creates a credibility vacuum that it then fills by establishing its own work as somehow wiser and better guided than that of mainstream science. While it is tearing down the credibility of science, ufology creates a need for its own alternative intellectual pursuits and products. Taking the cultural skeleton of science, ufology attaches its own intellectual and ideological meat.

The case of ufology demonstrates that research disciplines that have been expelled or excluded from the mainstream scientific framework do not necessarily cease to exist. They can live on in altered forms outside of the scientific community. However, to do so, these groups need to address their detachment. In the case of UFO researchers, considerable energy is spent justifying their existence and accounting for their rejection from the mainstream scientific community.

The manner in which ufology formulates and advances truth claims might be best understood as part of a discursive program that challenges the authority of conventional science by framing a very different set of activities as scientific. Alternately, ufology's devotees argue that their work is an improvement over the establishment's scientific research. In each case, ufology is not arguing simply that its findings are true. It is arguing that it has the authority to make scientific truth claims and it packages these claims strategically. Ufology is perhaps best understood in terms of the cultural processes from which its meanings and "truths" emerge.

The case of ufology shows that cultural packaging—a sort of once-removed indication of scientific authority—can be key in creating knowledge accepted as scientific. This adds a new dimension to the argument that scientific legitimacy is constructed, not just from scientific methodologies and institutional location, but also of language, culture, rhetoric, and symbols. Fringe researchers can make their cases for legitimacy using a variety of strategies—few of which involve actual research. Outside of the scientific community, scientific-sounding explanations and

proclamations of expert statuses hold sway. Ambiguities about what constitutes science can be capitalized upon by groups like ufologists that assemble shards of legitimacy using science as a cultural template.

METHODOLOGICAL APPENDIX

I attended twelve major UFO conferences in ten states—Arkansas, Connecticut, Kentucky, Massachusetts, Minnesota, New Hampshire, Nevada, New Mexico, Virginia, and Wyoming. The names of the conferences and organizing groups are omitted to protect the confidentiality of the subjects of participant-observation research. During two conferences I observed the merchandise exhibition areas while acting as a souvenir T-shirt vendor. I trained with a national UFO research organization and became a certified “UFO Field Investigator” and “consultant in sociology.” I participated in four local chapters of a national UFO organization, attending local UFO meetings in three New England states and one Midwestern state. I served as a volunteer and presented at UFO meetings. I attended day-long and weekend-long UFO research training seminars and workshops, and went to rural areas with large groups on “sky watches” in search of UFOs. I was analyzed for signs of “alien abduction” by specialists and attended a day-long self-hypnosis training session designed to “assist each participant to become the principal investigator of his or her UFO/ET encounters.” I visited four UFO museums and research centers.

UFO researchers and those interested in ufology make use of the Internet. For this reason on-line research comprises a critical data source. Daily, I monitored the major UFO research Internet sites and on-line discussion groups. The sites monitored include those of the Mutual UFO Network (www.mufon.com; www.rutgers.edu/~mcgrew/mufon/index.html); Society for Scientific Exploration (www.jse.com); National Institute for Discovery Science (www.accessnv.com/nids); International UFO Congress (www.ufocongress.com); International Center for Abduction Research (www.abductionresearch.com); Institute for UFO Research (www.frii.com/~iufor); Center for UFO Studies (www.cufos.org); and Flying Saucer Review (www.corpex.com/users/archmage/fsr/fsrhome.htm) (accessed August 1997 through September 1999). During this time period I also hosted an Internet site focusing on UFO research and indexed it with several UFO Internet rings. I monitored traffic on this site and used it to solicit contact from UFO researchers and consumers of UFO research findings. I assisted members of the UFO community in programming their UFO related sites and developed a group of contacts on the Internet with whom I maintained e-mail correspondence, and in some cases telephone and postal letter contact.

I examined the primary source literature of the UFO research community, including (1) a sample of back issues of major UFO journals and printed “symposia proceedings” over a fifty-year period, (2) classic and contemporary UFO

research books taken from several “recommended reading” lists of UFO study groups, (3) a sampling of videos of conference presentations of UFO researchers over a fifteen-year period, and (4) UFO manifestos and independently published papers.

Data was coded and analyzed in fieldnotes following the methodologies outlined by Emerson, Fretz and Shaw in *Writing Ethnographic Fieldnotes* (1995) and drawing also on Katz’s essay, “A Theory of Qualitative Methodology: The System of Analytic Fieldwork” (1988) and John and Lyn Lofland’s *Analyzing Social Settings* (1984). I used content analysis worksheets and bibliographic summaries to organize Internet, archival, and bibliographic research. Interviews were recorded. Additionally, notes were taken during the interviews. After reviewing the tapes and notes, the data was recorded and coded in the same manner as the fieldnote data.

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