UFOCRITIQUE
UFOs, Social Intelligence, and the Condon Committee

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ABSTRACT

Myriad *reports* of UFO sightings exist and are well documented in the literature of the study of UFOs. This field is widely known as *ufology.* The history of UFO sightings and their socio-political context and consequences constitutes the broad subject of this study and provides a site for analysis of how scientists address, both publicly and privately, anomalies that appear to pertain to science. The Condon Report, the *Scientific Study of Unidentified Flying Objects,* commissioned by the Air Force in 1968, provides a complex case for the exploration of how the outcome and conclusions of the study were influenced by all that had gone on before in ufology.

DEDICATION

Without the gentle support of my beloved husband, Richard P. Mroczynski, I could not have written this thesis. He has guided, challenged, inspired and comforted me, and has been tough and difficult when being tough and difficult was hard and necessary. To him, for his constancy, patience, love, and gentle support in all of my ferocious quests, I dedicate this work. He has been patient with my late nights, urgent, rush-rush multiple demands, and crankiness when my computer and technology fail me, as they often do. He has procured computer paper, cartridges, ink and toner, located misplaced books and repaired ruined disks, without complaint, at bizarre hours of the day. He has withstood the tempests of many “why-can’t I justs,” and helped me grow as a scholar and individual. He is my best friend, partner, companion and soul mate and has made this quest possible. For this, and so many other things, I honor him.

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Introduction

Whatever one may think about the material reality of *unidentified flying objects*[1](UFOs), myriad *reports* of UFO sightings exist and are well documented in the literature of the study of UFOs. This field is widely known as *ufology*. The history of UFO sightings and their socio-political context and consequences constitutes the broad subject of this study. It provides a rich site for analysis of how scientists address, both publicly and privately, anomalies that appear to pertain to science. The case study I have chosen to explore is a study of UFO sightings, the *Scientific Study of Unidentified Flying Objects*[2], commissioned by the Air Force in 1968 in response to an unprecedented wave of UFO sightings in America. The Air Force selected Dr. Edward U. Condon, a plasma physicist of the University of Colorado, to chair the study.

In this thesis, I answer four questions: (1) why the Air Force chose Edward Condon to chair the Committee which produced the report; (2) how the report was a product of the history of the UFO phenomenon and the cultural and intellectual context of its times; (3) how "social intelligence"–or the perception and transmission of information through cultural institutions–shaped Condon's scientific definition of the UFO problem, and (4) how social intelligence trumped "scientific method. in both the framing and resolution of the UFO problem.[3]

Problem Statement

It is commonplace that in science, the framing of scientific problems is culturally contingent on the history and social context of the problem under study. This is surely true in ufology. The question remains: to what extent does the cultural, social and political web in which scientific problems occur influence the selection of research problems and drive the outcome? In this thesis, I explore the sphere of public discourse on UFOs in the United States to show how the

[1] Meaning literally, flying objects which cannot be identified. Once they are identified (or accounted for scientifically) these objects become known as identified flying objects or IFOs. According to the UFO literature, fully 80 percent of all sightings have been successfully identified and causes explained.
[2] From this point forward, I shall refer to this study by the chairman/author's last name, as *The Condon Report.*
[3] I am indebted to Dr. Albert Moyer for the notion of the contingency of aspects of science, and in particular, that the scientific method itself is historically contingent. For an in depth discussion of how the cultural and intellectual

social, cultural and political web in which scientific problems occur drives the outcome. I focus on the Condon Report as a specific case study.

Methodology

I explore in detail the scientific, institutional, and popular discourse about UFOs occurs, from the time when the first UFOs were spotted by Kenneth Arnold in 1947 to the issuance of the *Condon Report* in 1969. I briefly review the history of UFO sightings, and the social, political, and scientific responses to them. Restricting the study to events in the United States, I explore the history of the various Air Force studies of UFOs, and briefly examine the cultural context in which they occurred. I explore the cultural context in which the Condon Report was embedded, in an effort to discover why Condon framed the research question the way he did. Finally, in an effort to understand if historical and social contingency led Condon to frame the research questions associated with his study the way he did, I use tools of STS to explore the interplay of the ethos of science and the notion of taboo as they relate to ufology. The works of Robert K. Merton and Thomas Kuhn and Bruno Latour provide the intellectual underpinning for my analysis of the social structure of science; the works of Steve Rayner and Mary Douglas provide a framework for understanding group identity and behaviors[4] and the role of institutions in shaping and maintaining group behaviors. The works of Henry Bauer, Sigmund Freud, and Franz Steiner provide the background for drawing conclusions about the relationship between the study of anomalies, science, and taboo.

Mapping the Terrain

Understanding the cultural history and context of UFO sightings is essential to understanding how reports of UFO sightings acted upon members of the scientific community of the period from 1947-1969.

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context in which a scientist formulates methods claims see Dr. Moyer's study *A Scientist's Voice in American Culture: Simon Newcomb and the Rhetoric of Scientific Method.*

[4] Which they refer to as "social solidarities," or what makes the groups stick together and defend their territory from outsiders. My work is also informed by aspects of the actor network theory for my analysis, particularly as it appears in the works of Latour and Weber.

In *Chapter One,* I briefly trace the early history of the Air Force studies of UFO sightings in an effort to explore the relationship of the sightings to their cultural contexts, so that we may understand the meaning, if any, UFO sightings acquired in the social web[5] or culture in which they were embedded. I explore the modern history of UFO sightings and show how the creation of the Condon Committee was in fact a response to the Air Force's inability to contain the UFO sighting reports within its institutional culture.

In *Chapter Two,* I study the cultural and political response of the government and the scientific communities to the sightings, and demonstrate the reactive character of the involvement of the U.S. government in ufology. Using historical records, I expose the essential tension between and among the norms of the Air Force as an institution, and science as both institution and practice. I also discuss the personal and professional qualities of Condon which made him the ideal candidate to head the Committee, and briefly trace the committee's history, showing how its goals, methods, and operations were historically contingent and culturally constitutive in character. I explore the inner workings of the National Academy of Sciences review of the *Condon Report* to demonstrate the cultural biases of a prestigious scientific institution.

In *Chapter Three,* focusing on the Report itself, I show how the framing of the research problem and organization of the Committee were themselves, a product of the clash between the ethos of science and ufology.

In *Chapter Four,* I bring the armamentarium of the tools of science and technology studies to bear on the specific problem of the relationship of the cultural context of ufology to how Condon framed the research question of the study.

I explore the ethos of science and the character of research into anomalies. I explore the relationship of cultural context of the individual, in this case Condon, to the framing of the research question, in this case, the study of UFOs, to determine what influence, if any, the nature of the research problem and the selection of Condon had on the conclusions of the study.

Using the text of the Condon Committee's report, I examine the structure and content of the report, as well as Condon's choice of research questions. This provides an answer to the question

[5] I use the phrase "social web" to refer to the complex, interwoven, multi-tiered matrix of society in which UFO sightings, and the people and institutions, who responded to them, occurred.

generated by the general problem of the thesis, and shows that the use of scientific method, including the choice of problem, is historically and culturally contingent, especially in the public sphere. The *Conclusion* provides some reflections on the difficulties of research in the field of ufology, and suggests topics for further study.

Chapter One: Setting the Stage for Condon

Flying Saucers and the Beginning of the Age of Confusion

On June 24, 1947, Kenneth Arnold,[6] a 32-year old successful businessman from Boise, Idaho, was making a routine flight from Chehalis, Washington, to Yakima, Washington, in his private plane, a Callair Aircraft (Steiger 1976, p. 23). Arnold had spent the earlier part of the afternoon installing equipment at the Chehalis, Washington Central Air Service, where he learned of a $5000 reward for the discovery of a C-46 Marine transport that had gone down in the mountains. Arnold decided to make a detour by Mt. Rainier to see if he could find the wreckage. In the course of the search, as he made a 300-degree turn above the town of Mineral, Washington, he was alarmed by a "tremendously bright flash" apparently in front of him. There was, however, nothing directly in front of him; he looked to his left and to the north, and spotted the source of the flash. A formation of bright objects moved roughly south from Mount Baker toward Mt. Rainier, flying in formation.

There were nine shiny objects. He later recalled: "They were flying diagonally in an echelon formation with the larger gap in their echelon between the first four and the last five." Arnold was at 9200 feet and estimated their speed to be approximately 1700 mph—roughly twice the speed of sound. He later said that he took 500 mph off the estimate because he just couldn't believe the speed.

> I especially noted that they were all individually independent. They were flying on their own, but every once in a while, they would give off a flash and gain a little more altitude or deviate just a little bit from the echelon formation. This went on all among the nine craft I was observing, alternating periodically, but not in a regular rhythm, I should say (Fuller 1980, pp. 17-30).

What startled him most was that he could find no evidence of a tail on them. When asked by the clamoring press what they looked like, Arnold said that their motion reminded him of a flat rock as it skipped across water; he later told the press that the objects flew like saucers would if you skipped them across water (Randles 1992, pp.14-17). In the world of ufology,[7] the rest is history.

[6] As a pilot and one of the founders of the Idaho Search and Rescue Pilots Association, he had logged over 4000 hours of mountain flying search and rescue operations, as well as 9000 flying hours in his Callair. He was technically qualified, and well respected in his community. He was a credible witness.

[7] Meaning, literally, the study of UFOs.

Headline writers across the country came up with the moniker "flying saucers," and it stuck as a descriptive term (Strentz 1972, p. 2). Those of a more scientific bent referred to them as "unidentified flying objects," or UFOs.

When Arnold described these objects, he was referring to their motion, as they bounced through the air, however, and not their appearance. Following the sighting, Arnold[8] was bombarded with phone calls and requests for interviews. Newspapers throughout the country took note of reports of other "flying saucers" and "flying discs." There were at least 20 other sightings on June 24, all but two in the Pacific Northwest.

The Arnold sighting was crucial for the development of the context of UFO sightings in the United States. The two words, "flying saucer," set the tone for the unexplained sightings that followed; they provided a useful and easily accessible label for the unexplained phenomenon, and, unfortunately, established the giggle factor from the very beginning.[9]

Initially, press accounts were neutral. Reporters stated literally what people said they had seen. But as the reports of sightings continued to pour in, and no physical evidence surfaced as proof, the press began to ridicule the phenomena. By the end of July 1947, newspaper reporters generally automatically placed anyone who had seen something strange in the sky in the crackpot category (Jacobs 1975, p. 32). Arnold himself became the subject of public ridicule. "If I saw a ten-story building flying through the air," he said later of his experiences, "I would never say a word about it." (Jacobs 1975, p. 35) An Air Force investigator privately noted in mid-July that Arnold was "practically a moron in the eyes of the majority of the population of the United States." (Bloecher 1967, pp. 1–11)

[8] Arnold notes that this sighting changed his life. Not only did he gain an international reputation, but he also dedicated the rest of his life to the study of the UFO phenomena.

[9] Any sensible person knows that saucers don't fly—they sit under teacups and catch whatever flows over. They are receptacles for spillage. From a sociological point of view, as it turns out, the label is ideally suited to the phenomena—it provides a name for the "spillage of the skies," better known as unexplained aerial phenomena. Labeling was an important step for the development of sighting waves. Once the phenomenon had an easily understood and colorful name, it could serve as a receptacle for anything seen in the skies not immediately recognized by the observer. This was a necessary, but not sufficient condition for the increasing number of subsequent waves of UFO sightings and sighting reports.

Continued reports of sightings now swept the nation, surging eastward like a tidal wave.[10] Most of the early reports came from daylight observations. Arnold's story encouraged everyone who had ever seen something strange in the sky to come out into the open with a sighting report (Jacobs 1976, p. 32).[11]

Sightings spread to Europe and grabbed headlines world-wide. Saucers were seen by day and by night, on land, and air and from the sea. Some moved rapidly, some remained stationary. The air seemed filled with strange objects and the public was hungry for more reports and explanations. Rational and scientific explanations held little interest for the general public, or, it would appear, for the scientific community at large. As early as 1947, the scientific community ignored the UFO sightings as a problem unworthy of scientific study.

At a meeting of the American Association for the Advancement of Science (AAAS) in Chicago on December 26, 1947, Dr. C. C. Wylie, astronomer at the University of Iowa, suggested that national mass hysteria created the UFOs. He attributed the sightings to "the present failure of scientific men to explain promptly and accurately flaming objects seen over several states, flying saucers and other celestial phenomena which arouse national interest." He concluded that this failure caused the public to lose faith in the intellectual ability of scholars. The astronomer at the Hayden Planetarium, Gordon A. Atwater, told the *New York Times* that the first sighting reports were authentic, but that most subsequent reports resulted from a "mild case of meteorological jitters" combined with "mass hypnosis." Dr. Newborn Smith, of the United States Bureau of Standards laughed the whole matter off as another Loch Ness monster story.[12] For the first five years after the Arnold sighting, the *New York Times* consistently took a humorous stance toward the controversy (Jacobs 1976, pp. 34-36).[13] It printed a tongue-in-cheek editorial which identified the unidentified objects as "atoms escaping from an overwrought bomb," Air Force anti-radar devices, visitors from another planet or afterimages of light on the human eye. Another suggestion was that the objects, all silver, were coins that "high riding

[10] See the Appendix for a complete discussion of the wave-like characteristics of UFO sightings.
[11] According to Jacobs: "In this sense, the Arnold sightings acted as a dam-breaker and a torrent of reports poured out."
[12] *New York Times*, 27 December, 1947, p. 28, 6 July 1947, p. 36.
[13] The *New York Times* also interviewed Soviet Foreign Minister Gromyko and air pioneer Orville Wright. Tongue in check, Gromyko suggested that UFOs were discs from Soviet discus throwers practicing for the Olympic Games. Orville Wright believed that no scientific basis for the objects existed and then hinted that somehow the government was involved and that its intentions were manipulative in nature. "It is more propaganda to stir up the people and excite them to believe that a foreign power has designs on this nation." In the same article (10 July 1947, p. 23) the

government officials" scattered to reduce the country's overhead. *Life Magazine* (21 July, 1947) suggested that these sightings were not unlike those of the Loch Ness Monster.

The field was ripe for sensationalist writers and amazing stories. (Menzel and Taves 1977, pp. 1-8) Flying saucer societies, formed around the world and run by a select few, published newsletters, held meetings and conferences, and generally milked the public for attention and money. Historically, most UFO investigators have been amateurs who claim to have seen a UFO themselves. The scientific community has, by and large, treated the subject of the existence of UFOs with ridicule and has ignored the amateur groups such as the National Investigations Committee on Aerial Phenomena (NICAP)[14] wherever possible.

The Arnold sighting of 1947 kicked off the first UFO wave.[15] To the consternation of the military, particularly the Air Force, many waves of sightings followed, accompanied by amazing stories, fright and, at times, panic. The wave-like nature of UFO sightings and reports merits further discussion. Ufologists have identified categories of waves: short term, with narrow distribution;[16] long term with narrow distribution;[17] short term with broad distribution;[18] and long

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Times quoted a Princeton psychologist, Leo Creeps, as saying that the real problem was whether the flying saucer was an illusion with objective reference or whether it was "delusionary in nature."

[14] NICAP was founded in August 1956 as a central research organization for coordinating the study of UFOs. By 1958 NICAP had 5000 members. In 1966, its membership peaked at 14,000. Initially NICAP supported the Condon Study and passed on information on sightings gathered by its network. In early 1968, when it became clear that NICAP would have little influence on the content of the Condon Report, it broke with the project. Over the years, NICAP's membership reflected the level of sighting activity in the United States. During periods of high activity, its membership was high. See Clark 1998, pp. 411-413 for a profile of NICAP.

[15] The Air Force uses the term "flap" for what others refer to as waves. According to Ruppelt (1956, p. 141): In Air force terminology a "flap" is a condition, or situation, or state of being of a group of people characterized by an advanced degree of confusion that has not quite yet reached panic proportions. It can be brought on by a number of things, including the unexpected visit of an inspecting general, a major administrative reorganization, the arrival of a hot piece of intelligence information, or the dramatic entrance of a well-stacked female into an officers club bar." Wave has a very specific meaning in ufology, as the result of the effort to understand and map the linkages, cause, and effect, if any, between the numbers of sightings and the numbers of reports. There must be a certain homogeneity of the quality of the reports with regard to place, time, appearance or behavior. Waves can be local or regional in nature. Each UFO wave has a unique structure, which is a function of the matrix—social, geographic and temporal—in which the wave occurs. (Clark, 1998) A wave that begins abruptly with many initial sightings is called an explosive wave: one that begins gradually, peaks and tapers off is a gradual wave.

[16] The wave of sightings at Exeter, New Hampshire, in September and October of 1965 falls into this category.

[17] This activity, although long-term, stays in a relatively fixed geographic area. John Keel has described the ghost lights of Point Pleasant, West Virginia, as ones fitting in this category. In many cases, the area is so well known for these activities that people go "UFO hunting" on a regular basis. Area 51 in New Mexico has this reputation. It is believed that if one just goes out and waits at night, one will be rewarded by seeing a UFO. A wave of reports came from the Gulf Breeze area of Florida during 1987 and 1988.

[18] The ghost rockets of Scandinavia fall into this category. National waves unfold in national boundaries; a third distinction recognizes regional waves, such as the sightings of the green fireballs in the American southwest in 1948 and early 1949.

term, with broad distribution.[19] These are examples of major wave categories, but by no means the only ones.[20] Of particular importance to this study is the categorization of the great wave of 1964-1968 as a *pandemic,* for the events of this period will prove key to understanding the genesis and effect of the Condon Report.

According to ufologists (Clark, 1998, Jacobs, 1975), each UFO wave has a unique structure that is a function of the matrix—social, geographic, and temporal—in which the wave occurs. The events of the most familiar and most researched waves, or those of broad distribution and short duration, follow two distinct courses: *explosive* and *gradual*. The *explosive* wave shows UFO activity that suddenly breaks out, quickly peaks and soon subsides. A graph of the reports shows steep and precipitous contours.[21] The *gradual* wave more resembles the profile of a bell curve, showing a gradual build-up in activity, with a crest of activity over a period of weeks or months, and then a gradual decline (See Appendix A for a more complete discussion of UFO waves).[22]

If we map waves of UFOs and compare them with the creation of studies of UFOs, the dose-response mechanism[23] becomes clear. When waves of sightings were high, accompanied by intense media coverage and publicity, pressure on the Air Force to "solve" the riddle intensified. It the controversy continued, at some point, the Air Force took action to reassure the public that UFOs had prosaic explanations and that such sightings could be explained as sightings of misidentified objects such as weather balloons, stars and planets, and mirages caused by temperature inversions. When the sighting activity was especially heavy and extensive, such as the pandemic of 1964–1968, to Air Force took action to address the issue in a more formal way. In this case, the Air Force sought a university to study the UFO problem.

The following charts map the UFO waves and the creation of major UFO studies.

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[19] In this category, UFO activity is more intense that in other waves. Clark calls the classic wave an epidemic, reserving the label of pandemic for the great waves that are long term and have broad distribution. The waves of 1908–1916 and 1964–1968 fall into the category of great pandemics. Lesser pandemics are the periods of the 1930s, 1973–1974, and 1978–1982.

[20] One could easily make the claim that there are as many categories of waves as there are contributors to the UFO literature and analysis.

[21] According to Clark, who describes this model in his *Encyclopedia*, the waves of 1896, 1947, 1950, 1957, and 1973 fit this model.

[22] Clark puts the waves of 1897, 1909 (New England), 1913 (Britain), 1946, 1952, 1954, and 1965 in this category.

[23] This analogy is drawn from the medical community. For a "dose" of medicine, there is a direct response in the body.

Table 1.1 Major UFO Waves

Gradual	Explosive
	1896
1897	
Pandemic	**1908 - 1916**
1909	
1913	
1946	
	1947
1952	
	1957
Pandemic	**1964 - 1968**
	1973
	1983
1987	

Table 1.2 Major UFO Studies

Project Sign:	January 22, 1948–December 30, 1948
Project Grudge:	February 11, 1949–March 1952
Project Twinkle:	February 1950–December 11, 1951
Project Blue Book Initiated:	March 1952
Robertson Panel:	January 14, 1953
O'Brien Committee:	February 6, 1966
Congressional Hearing:	April 5, 1966
Condon Study Contract signed:	October 6, 1966
Congressional Hearing (Roush):	July 29, 1968
Condon Report Completed:	December 1968
National Academy Review:	January 6, 1969
Condon Report Released:	January 8, 1969
Project Blue Book Terminated:	December 17, 1969
AAAS Symposium on UFOs:	December 26–27, 1969

The greater the number of sightings, the more media coverage of the sighting, the greater the media coverage, the more sightings, and the bigger the public flap. Eventually, in response to a significant public outcry, the Air Force, *qua* institution, reacts, and creates an official study.

Projects Sign, Twinkle, Grudge, and Blue Book

From the period of 1947–1969, the Army Air Force and then later the Air Force[24] created four projects explicitly designed to address the problems posed by increased UFO sightings on two levels: the research level, focused on solving technical questions pertaining to UFOs; and the public relations level, focused on smothering the fires of public interest in the phenomenon.

Projects Sign, Twinkle, Grudge, and Blue Book have characteristics that bear striking similarities: each was formed in response to a wave of UFO sightings; each contained some basis of serious research in an effort to understand the phenomenon; each was designed to respond to the public interest in UFOs by "settling the matter"; and each was viewed with ambivalence by various parts of the Army Air Force hierarchy (Jacobs 1970; Ruppelt 1956; Clark 1998). In the beginning, the Army Air Force thought there might be something of serious interest in the phenomenon; by 1960, however, the Air Force acknowledged that UFOs were eighty percent a public relations issue. It variously tried to transfer the responsibility for investigation to the Secretary of the Air Force's Office of Information, the National Aeronautics and Space Administration, the National Science Foundation, the Smithsonian, and the Brookings Institute (Clark 1998, p. 735). All efforts were unsuccessful.

The creation of Project Sign provides a case study of the issues in play in the social fabric of the Army Air Force community at the time. The Army Air Force was seriously troubled by the UFO wave of 1947. Although a formal investigative project was not set up until September of 1947,[25] the Army Air Force had been vitally interested in the UFO reports since the Arnold sighting. Because national defense was its primary responsibility, the Army Air Force was

[24] The Air Force was created when President Truman signed the National Security Act on July 26, 1947, aboard the Presidential airplane, a Douglas C-54 transport aircraft called the *Sacred Cow*. The National Security Act contained several key provisions: it created three different departments of the military, each headed by a permanent secretary. Each department had its own duties and responsibilities. The Department of the Army was responsible for ground warfare. The Department of the Navy was responsible for naval warfare as well as naval aviation. The Department of the Air Force was responsible for all land based air warfare. These defined roles served two basic purposes. First, this architecture increased the national security capabilities of the military, because each department could focus on one specific part of the total defense of the United States. Secondly, these defined roles were designed to put an end to the repetitive nature of arms development and purchases. No two departments would be required to purchase the same weapons systems. This was a frequent occurrence prior to the act, particularly during World War II. The first Secretary of the Air Force was W. Stuart Symington who had previously served as the Assistant Secretary for Air War (January 3, 1947-September 18, 1947) when the air branch of the War Department was the U.S. Army Air Corps. Symington served as the Secretary of the Air Force from September 18, 1947 to April 24, 1950. His leadership provided continuity between the activities of the Army Air Force and newly-created Air Force.

initially interested in whether or not these objects were secret weapons, developed by the Soviets or the Germans, and thus posed a serious threat to national security. The Army Air Force also considered the possibility that the UFOs were secret weapons developed by another branch of the military and were domestic in nature. In response to the controversy caused by the reports of sightings of unidentified flying objects, the Army Air Force assumed the task of trying to distinguish between atmospheric and man-made phenomena.

On July 4, 1947, in response to the rise in the numbers of UFO sightings, an Army Air Force spokesman said that the military had not developed a secret weapon that would account for the strange sightings, and that a preliminary study of UFOs "had not produced enough fact to warrant further investigation." Publicly, he dismissed the Arnold sighting as not worthy of further study. The same announcement contained additional news: in spite of the negative conclusion, the Army Air Force's Air Material Command (AMC)[26] would investigate the matter further to determine whether or not the objects were meteorological phenomena (*NYT*, 4 July 1947). This attitude was characteristic of the Air Force, both the Army Air Force, and then the newly-created Air Force, from the very beginning: *publicly* de-bunk and treat the matter lightly, and *privately* investigate, and take the matter seriously.

On December 30, 1947, the Army Air Force ordered Project Sign to be set up under Air Materiel Command (AMC) at Wright Field.[27] As Captain Edward Ruppelt—later to be named head of a follow-on project, Project Blue Book—noted, from the very beginning there was no consensus of opinion among Army Air Force personnel on the subject of UFOs. One camp believed that they were silly and not worthy of study; others thought it very likely that they were of extraterrestrial origin. This latter group developed what came to be known as the

Extraterrestrial Hypothesis, or ETH. At the time, ETH was one of many hypotheses to explain the phenomena.[28] Ruppelt notes that a deep sense of ambiguity permeated the project.

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[26] The Air Technical Intelligence Center (ATIC) of the Air Force later assumed this responsibility.
[27] Now Wright Patterson Air Force Base in Dayton, Ohio.
[28] Theories of Explanation for UFOs include the following: secret weapon; unknown animal; parallel universe; seismic activity; hollow Earth; underwater civilization; psychological, as the result of the unconscious collective will; Extraterrestial visitors; hoaxes; and the result of misperceptions of conventional objects. Conventional object misperceptions include misidentifications (encompassing misperceptions, illusions and misidentifications) of: planets; aircraft; birds; weather balloons; ball lightning; mirages caused by temperature inversions; comets; meteors; rainbows; ice crystals; insect swarms and swamp gas. For a complete discussion of theories, see "The Truth is Here: UFO Anthology", CD Rom, Chatsworth, CA: Cambrix Publishing. For a comprehensive analysis of the misperception of conventional objects, see Menzel, 1953.

> The attitude toward this task varied from a state of near panic early in the life of the project, to that of complete contempt for anyone who even mentioned the words "flying saucer." This contemptuous attitude toward "flying saucer nuts" prevailed from mid-1949-to mid-1950. During that interval, many of the people who were, or had been, associated with the project believed that the public was suffering from "war nerves" (Ruppelt 1956, pp. 6-8).[29]

In many cases, the ambiguity resulted in a decision by local Air Force personnel not to pass the potentially relevant information up the reporting chain, lest they be perceived as "cranks," themselves, or troublemakers, by those higher up the chain of command. Ruppelt (1956) points out that the internal attitude of top brass varied greatly depending on who was in charge. Those lower on the hierarchical chain often had to guess which way the wind was blowing before forwarding their sighting reports.

Secrecy only intensified the problem. Ruppelt (1956) notes that when classified orders were issued to investigate all flying saucer sightings, the orders carried no explanation why the information was wanted.[30] This in and of itself was unusual enough to alert Air Force personnel that, indeed, something out of the ordinary was happening, and encouraged the development of a "cloak and dagger" mentality among Air Force personnel.

> By the end of July 1947, the UFO security lid was down tight. The few members of the press who did inquire about what the Air Force was doing got the same treatment that you would get today[1956] if you inquired about the number of thermo-nuclear weapons stock piled in the U.S.' atomic arsenal. No one, outside of a few high ranking officers in the Pentagon, knew what the people in the barbed wire enclosed Quonset huts that housed the Air
>
> Technical Intelligence Center were thinking or doing. The memos and correspondence that Project Blue Book inherited[31] from the old UFO projects told the story of the early flying saucer era. These memos and pieces of correspondence showed that the UFO situation was considered to be serious; in fact, very serious. The paper work of that period also indicated the confusion that surrounded the investigation, confusion almost to the point of panic. The brass wanted an answer quickly, and people were taking off in all directions. Every ones' theory was as good as the next and each person at ATIC was plugging and investigating his own theory. The ideas as to the origins of the UFOs fell into two main categories, earthly and non-earthly. In the earthly category, the Russians led, with the U.S. Navy and their X-F-5-U-1, the "flying Flapjack" pulling a not too close second. The desire to cover all leads was graphically pointed up to me in a personal hand-written note I found in a file. It was from ATIC's Chief to a civilian intelligence specialist. It said: "Are you positive that the Navy

[29] Ruppelt was head of the Air Force investigation from 1950-1953 and had access to many files that are now apparently missing.

[30] According to Ruppelt, this further alarmed Air Force personnel. "This lack of explanation and the fact that the information was to be sent directly to a high-powered intelligence group within Air Force Headquarters stirred the imagination of every potential cloak and dagger man in the military intelligence system. Intelligence people in the field who had previously been free with opinions, now clamed up tight." (p. 23).

[31] From Project Sign.

> junked the X-F-5-U-1 Project?" The non-earthly category ran the gamut of theories, with space animals trailing interplanetary craft about the same distance the navy was behind the Russians (Ruppelt 1956, p. 22).

While the top brass or "certain highly placed individuals" were officially chuckling at the very mention of UFOs, the staff of ATIC was expending the maximum effort to conduct a serious study. In all, Ruppelt notes, there was an extensive amount of confusion and uncharacteristic lack of coordination among Air Force personnel. Even the traditional, established hierarchical authority native to the Air Force was not strong enough to contain the psychological spillage generated by UFO sightings.

As 1947 drew to a close, Project Sign had outgrown its initial panic and had settled down to a routine investigation; yet, the messages it received and sent out still were conflicting, at all levels. No wonder the public was confused.

At the end of 1948, another series of extraordinary sightings began. In late November, people around Albuquerque began to report sightings or "green streaks," or "green flares" in the night sky. Initially, the intelligence officers at Project Sign and at Kirtland Air Force Base in New Mexico thought they were green signal flares. As the reports kept coming in, the Air Force began to reconsider its initial assessment.

Because New Mexico was the site for most of the U.S. atomic weapons development, the green fireballs were of great concern to the military (Ruppelt 1956, pp. 48-49). Kirtland Air Force Base was the site of the atomic bomb storage; Los Alamos was the primary location for atomic bomb development. It was essential that the Air Force determine if the sightings were simple fireballs, Soviet aircraft, or from outer space. After study, the Air Force concluded that the green fireballs were of natural origin and asked its Cambridge Research Laboratory to set up a program to photograph the green fireballs, and measure the speed, altitude, and size. Thus was born Project Twinkle.

Work began on the project in the summer of 1949. By February 21, 1950, Project Twinkle had set up its first operations posts, manned by two observers who scanned the skies with theodolite, telescope, and camera.[32]

[32] Twinkle closed down in December 1951. Its final report stated that the investigators had "no conclusive opinion concerning the aerial phenomena of interest," and speculated that the "earth may be passing through a region in space of high meteoric population. Also, the sun spot maxima in 1948 perhaps in some way may be a contributing factor." (Clark 1998, 262-263) At Los Alamos, Ruppelt wrote later, scientists theorized that the fireballs were projectiles fired into the earth's atmosphere from an extraterrestrial spacecraft.

Earlier, in late July 1948, the staff of Project Sign prepared a dramatic document known as *The Estimate of the Situation.* The document was provoked by an incident that took place on July 24, 1948. A rocket-shaped object with two rows of "square" windows and flames shooting from its rear streaked past a DC-3 flying 5000 feet over Alabama. It was also observed by a passenger in the plane. Sign's pro-extraterrestrial faction, including Captain Robert Sneider, its Director, was convinced that this was the proof they had been seeking—proof that the extraterrestrial hypothesis was true (Clark 1998, p. 491). Ruppelt recalled:

> In intelligence, if you have something to say about some vital problem you write a report that is known as an "Estimate of the Situation." A few days after the DC-3 was buzzed, the people at ATIC decided that the time had come to make an Estimate of the Situation. The situation was the UFOs; the estimate was that they were interplanetary! It was a rather thick document with a black cover printed on legal-sized paper. Stamped across the front were the words TOP SECRET (Ruppelt, p. 57-58).

Classified Top Secret, the document allegedly[33] asserted that the UFOs were really interplanetary vehicles. This secret document was presented to the Chief of Staff, General Hoyt S. Vandenberg, "before it was batted back down."[34] Vandenberg refused to accept its conclusions without proof. A group from the Project allegedly went to Washington, D.C., to try to persuade him of the strength of their evidence, but Vandenberg held firm. He did not accept the report. Soon afterwards, the report was incinerated (Randles 1985, p. 29).[35]

Michael Swords inspected the original draft of Ruppelt's manuscript [36] and discovered that Ruppelt's published account of the material contained in the *Estimate of the Situation* left out significant documentation proving that the UFOs were of extraterrestrial origin. Swords concludes that the Air Force censored Ruppelt's published account.

According to Kevin Randles (1997, pp. 9-10) the group of military officers and civilian technical intelligence engineers who prepared the report were called to the Pentagon to defend the *Estimate*. Swords (1993) noted that the defense was unsuccessful, and not long after the visit to the Pentagon, the Air Force reassigned everyone associated with the effort. "So great was the

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[33] There appear to be no copies of this document in the public records. Condon was unable to locate the document since the official copies were destroyed by the Air Force. Said Condon, "Copies of the report were destroyed, although it is said that a few clandestine copies exist. We have not been able to verify the existence of such a report." *Condon Report*, p. 506.

[34] Ruppelt's words.

[35] According to Randles, during the final weeks of the project, the Sign staff felt demoralized by the rejection of their findings and burned the document. Ruppelt supports this: "The Estimate died a quick death. Some months later its was completely declassified and relegated to the incinerator" (1956, p. 58).

carnage that only the lowest grades in the project, civilian George Towles and Lieutenant H. W. Smith, were left to write the 1949 Project Grudge document about the same cases." Randles adds:

> It was clear to everyone inside the military, particularly those who worked around ATIC, that Vandenberg was not a proponent of the extraterrestrial hypothesis. Those who supported the idea risked the wrath of the number one man in the Air Force. They had just had a practical demonstration of how devastating that wrath could be. If an officer was not smart enough to pick up the clues from what had just happened, then that officer's career could be severely limited. (1977, p. 9)

The social and political consequences of coming up with the "wrong" finding could be devastating. Ruppelt calls this institutional interference with what purported to be a serious investigation, the "brass curtain," a curtain that was to prove impenetrable.

The Air Force assigned the official report of Project Sign a secret classification in February of 1949; at the same time, the Air Force changed the name of the project to Project Grudge. Project Sign's[37] final report concludes with the following recommendations:

> Future activity on this project should be carried on at the minimum level necessary to record, summarize and evaluate the data received on future reports and to complete the specialized
>
> investigations now in progress. When and if a sufficient number of incidents are solved to indicate that these sightings do not represent a threat to the security of the nation, the assignment of special project status to the activity could be terminated. Future investigations of reports would then be handled on a routine basis like any other intelligence work.
>
> Reporting agencies should be impressed with the necessity for getting more factual evidence on sightings, such as photographs, physical evidence, radar sightings, and data on size and shape. Personnel sighting such objects should engage the assistance of others, when possible, to get more definite data. For example, military pilots should notify neighboring bases by radio of the presence and direction of flight of an unidentified object so that other observers, in flight or on the ground, could assist in its identification (Steiger 1976, pp. 172-173).[38]

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[36] Michael Swords had an opportunity to review drafts of Ruppelt's work. He found that omissions from Ruppelt's classic work pertained to proof that some UFOs were extraterrestrial (Swords, 1993).

[37] Project Sign was not declassified until 1961.

[38] Project Sign classified the objects to be studied in four groups: flying disks, torpedo or cigar-shaped bodies with no wings or fins visible in flight, spherical or balloon shaped objects, and balls of light. The report noted that fully 20 percent of the aerial objects sighted had been identified, and that there was high confidence on the part of the staff that a large part of the remaining reports would be explainable using the knowledge of astronomy and meteorology.

Although the order of February 11, 1952 that changed the name of Project Sign to Project Grudge[39] had not directed any change in the operating policy of the project, it marked the beginning of the "Dark Ages" in the Air Force investigation of UFOs.

> It had, in fact pointed out that the project was to continue to investigate and evaluate reports of sightings of unidentified flying objects. In doing this, standard intelligence procedures would be used. This normally means the *unbiased evaluation* of intelligence data. But it doesn't take a great deal of study of the old UFO files to see that standard intelligence procedures were no longer being used by Project Grudge. Everything was being evaluated on the premise that UFOs couldn't exist. No matter what you see or hear, don't believe it… New People took over at Project Grudge… With the new name and new personnel came the new objective, get rid of the UFOs. It was never specified this way in writing, but it didn't take much effort to see that this was the goal of project Grudge. This unwritten objective was reflected in every memo, report and directive… To one who is intimately familiar with UFO history, it is clear that Project Grudge had a two-phase program of UFO annihilation. The first phase consisted of explaining every UFO report. The second phase was to tell the public how the Air Force had solved all the sightings. This, Project Grudge reasoned would put an end to UFO reports (Ruppelt 1956, pp. 59-61).

The project office threw up a security wall and drastically reduced the numbers of interviews to the press.

Project Grudge retained J. Allen Hynek, an astronomer from Ohio State, to investigate the sightings and bring scientific credibility to the project. In an effort to explain all the reports, and with the help of Hynek, by August of 1949, the project staff had prepared a 600-page official report that reviewed 244 sightings.[40] It concluded that 23 percent of the reports were unexplainable, but addressed the issue by saying "there are sufficient psychological explanations for the reports of unidentified flying objects to provide plausible explanations for reports otherwise not explainable."[41] This is a case of an Air Force approach to the issue that can be characterized as "fact-by-dictum," or *ex-cathedra.* This is a tactic that the Air Force used frequently in its response to the UFO phenomena from 1947 to 1969, when the last of its projects, Project Blue Book, was terminated. In spite of its efforts, the Air Force was never very successful in deflecting public interest; in fact, more often that not, it gave rise to the public's

[39] The goals of Project Grudge were two-fold: to explain all UFO sightings as conventional objects or phenomena; and, to publicize the fact that all reports had been explained.
[40] Of the 244, 7 were excluded from consideration: one is identified in the subject report as a hoax, three were duplicates, and three contained no information. The remainder of the cases (237) were divided into those of and pertaining to astronomy, and those which could not be construed as astronomical, balloons, rockets, flares, birds, and others such phenomena fell into this category. Seventy-five of the 237 fell into the astronomical category, 84 were non-astronomical, but suggestive of other explanations, leaving 78 as unexplained.
[41] Project Grudge Final Report, in Steiger's *Project Blue Book*, p. 233.

suspicion of existence of a government/military cover-up, and, in the end, only piqued public interest. Hynek (Ruppelt 1956, p. 59) pointed out that the original Air Force approach was hardly scientific. A "brass curtain" surrounded even Blue Book, with all its policies being set by the military, rather than by the scientists who were called in for consultation.[42]

The conclusions presented by Project Grudge are not surprising.

- Evaluation of reports of unidentified flying objects to date demonstrate that these flying objects constitute no direct threat to the national security of the United States.

- Reports of unidentified flying objects are the result of:

  a) Misinterpretation of various conventional objects;
  b) A mild form of mass hysteria or "war nerves;"
  c) Individuals who fabricate such reports to perpetrate a hoax or to seek publicity;

- Psychopathological persons

- Planned release of unusual aerial objects coupled with the release of related psychological propaganda could cause mass hysteria.

- Employment of these methods by or against an enemy would yield similar results (FUFUOR Grudge Report, 1999, p. vi.).

The Project recommended that "the investigation and study of reports of unidentified flying objects be reduced in scope," that conclusions one and two of the report be made public in a controlled way, and that the Psychological Warfare Divisions and other governmental agencies interested in psychological warfare be informed of the results of this study.[43] The Project's concern about the national security implications of mass public hysteria and its relationship to the potential of psychological warfare prefigures concerns later to be expressed by the Robertson Panel, in 1953.

On October 27, 1951 the Air Force asked Captain Edward J. Ruppelt to lead the project, as a result of a meeting at Air Force Intelligence Headquarters, in Washington, D.C. Under Ruppelt's leadership, a new staff was assembled. The new staff prepared a standardized questionnaire to be used in reports of sightings, and engaged a UFO clipping service to make sure that they saw all the reports that received press coverage, whether or not they were reported to the Air Force. Ruppelt also persuaded the Air Force to allow him to subcontract to the Battelle Memorial

[42] Hynek suggested that the situation might have been improved had the investigation been placed at either the Air Force Cambridge Research Laboratory or the Air Force Office of Scientific Research.

Institute to conduct analyses of specific UFO reports and perform statistical research on the phenomenon in general. By March 1952, the Air Force had upgraded Project Grudge from a project within a group to a separate organization, the "Aerial Phenomena Group." The Project also got a new name: Project Blue Book.[44] Project Blue Book lasted from March 1952 to March 1969. In this 17-year span, Blue Book had six Directors,[45] who, with the exception of Ruppelt, were generally hostile to UFOs.

Under Ruppelt's leadership, new procedures were put in place to ensure that the Air Force infrastructure took reporting UFOs seriously. Air Force letter 200-5, Subject: Unidentified Flying Objects,[46] established new procedures which effectively by-passed the hierarchical reporting mechanisms characteristic of Air Force culture. The April 5, 1952, letter, signed by the Secretary of the Air Force, stated, in essence, that the investigation of UFOs was a serious subject and that project Blue Book was responsible for the study. In addition, the letter directed the commander of every Air Force installation to forward all UFO reports to ATIC directly by wire, with a copy to the Pentagon. A more detailed report was then to be sent by airmail. More importantly, the letter also gave Project Blue Book the authority to contact directly any Air Force unit in the United States *without going through the chain of command.* This amounted to a sanctioned breach in the traditional military hierarchy, and imbued Blue Book initially with additional clout. According to Ruppelt: "This was almost unheard of in the Air Force and gave our project a lot of prestige"(Ruppelt 1956, p. 133).

In 1952, the wave of UFO sightings and reports surged to an all-time high, after a dormant period of almost two years. ATIC received 1501 sighting reports—at that time it was the highest number of sightings ever recorded in one year. Under the leadership of Captain Ruppelt, the Air Force developed standard procedures for analysis and reporting; sought the assistance of engineers, astronomers, and physicists; made plans to study UFO maneuvers and motion; and developed special radar and photographic detection methods. For the first time, thanks to Ruppelt, the study of UFOs by the Air Force put in place what could pass for the beginnings of a systematic approach (Jacobs 1976, p. 55).

[44] According to Ruppelt, the name was chosen because college tests were given in blue books.
[45] Ruppelt, 1952; Olsen, 1953; Captain Charles Hardin, 1954; Captain George Gregory, 1956; Major Robert J. Friend, 1958; Major Hector Quintanilla, 1963-69. Gregory and Quintanilla were hard-liners and de-bunkers.
[46] Project Grudge, Fund for UFO Research edition, Appendix.

The dramatic increase in sighting reports in 1952 posed two significant problems for the Air Force. First, Ruppelt did not have the staff or the resources to investigate each report thoroughly. Sightings such as those at National Airport in Washington, D.C., July 19 and 20, 1952 and the Florida scoutmaster case were high profile cases and generated an enormous amount of controversy and publicity. At 11:40 p.m. on Saturday, July 19 1952, an air traffic controller at Washington National Airport spotted several "pips" or "blips" clustered together in a corner of the radarscope. They were moving at 100 mph over an area 15 miles south-southwest of the capital. No aircraft were known to be in the area (Clark 1998, pp. 653-663). More sightings occurred throughout the day, into the evening, and on July 20. They were tracked on radar; thousands of people claimed to see them visually. The Air Force scrambled a B-52 to make visual contact. On the afternoon of July 29, the Air Force held a press conference in the Pentagon. The explanation it favored was that of a temperature inversion, causing a mirage.

The Washington sightings, the most sensational since the Mantell incident in 1948,when an Air Force pilot was killed in the crash of his plane as he chased a UFO to 20,000 feet, made headlines around the country—*AIR FORCE DEBUNKS SAUCERS AS NATURAL PHENOMENA*. The news that they were not extraterrestrial phenomena even pushed coverage of the Democratic National convention off the front pages of newspapers across the country (Jacobs 1976, p 76-79). So great was the flap generated by the sightings, that at 10:00 in the morning on the day after the Washington, D.C., sightings, Presidential aide Brigadier General Landry, at the request of President Truman, called the project in Ohio to find out what was going on in Washington, D.C. Ruppelt himself took the call and personally briefed Landry (Jacobs 1976, pp. 67-77).

The Cold War had a dramatic impact on the Air Force perception of the UFO problem. There can be no doubt that the UFO sighting reports generated enormous activity for the Air Force. But perhaps more important is the second problem posed by a dramatic increase in sightings: the outbreak of sightings was so high and so intense that the Air Force began to worry that its intelligence channels were being clogged by the sighting reports of UFOs, and thus, national security compromised.

> The Pentagon and Blue Book were swamped with press and congressional inquiries about the UFO situation. So many calls came into the Pentagon alone that its telephone circuits were completely tied up with UFO inquiries for the next few days. The Air Force was keenly aware of the dangers involved in jamming communications in the military's nerve center. As

> Al Chop (the press spokesman for the Pentagon) said later, the Air Force had to do something to keep the people quiet (Jacobs 1976, pp. 77-78).[47]

The Air Force was afraid that a hostile power could take advantage of this communications logjam to threaten the security of the United States. In other words, by the mid-1950s, it was not the UFOs themselves that concerned the Air Force; it was the increase in *reports of UFOs* generated by noisy public debate on the topic that the Air Force was afraid of. This fear, more than anything else, explains the Air Force's growing need to remove the problem of UFOs from the public eye.

By 1953, a growing number of people in the Air Force and the Central Intelligence Agency began to think that—for reasons of national security—the number of UFO reports had better be reduced drastically, if not eliminated altogether. Air Force Chief of Staff General Hoyt Vandenberg perhaps best summed up the feelings of many Air Force officials in an interview with the *Seattle Post Intelligencer*. After reiterating that UFOs were neither extraterrestrial, nor products of foreign technology, nor secret weapons, he bluntly stated that he "did not like the continued, what might be called 'mass hysteria' about flying saucers"(Jacobs 1976, p. 73).

Although the 1952 wave generated intense anxiety for the Air Force, it also generated proportionally broader interest in UFOs, especially in the scientific community. Scientists across the country weighed in, with many choosing prosaic explanations of the phenomena; "Flying discs are motes in the eyes of a dyspeptic microcosm or perhaps some abnormal cortical charges in the migrainous," physician Edgar Mauer wrote in *Science*. Professor C. C. Wylie, professor of astronomy of the University of Iowa, said that the object over Washington National Airport was the planet Jupiter. According to Dr. Gerald Kuiper, the objects were weather balloons. Dr. Jessie Sprowls, professor of psychology at the University of Maryland, called them hallucinations, and said in a radio interview that Americans should "just sort of forget about it." Dr. Horace Byers, Chairman of the Meteorology Department at the University of Chicago, concluded that the objects were "junk" in the sky, materials such as balloons, meteors, clouds, reflections, and the like. "I know of no reputable scientist who places any credence in reports that so-called flying saucers come from a mysterious or unexplained source," he said. Dr. Otto Struve, astronomer at the University of California, Berkeley, noted that the evidence for the reality of flying saucers "appears to be completely negative to the astronomer." Even Einstein had an opinion. When an

[47] Jacobs interviewed Al Chop on 4 January 1974.

evangelist in Los Angeles asked him to comment, he replied: "These people have seen *something.* What it is I do not know and I am not curious to know"(Jacobs 1976, p. 71).[48]

The CIA, especially, was upset by the clogging of intelligence channels during the outbreak of UFO sightings over Washington, D.C., in late July 1952. Top brass, including high-ranking Air Force officers, believed that it was possible for the Soviet Union, or any enemy of the United States, to use a UFO wave as a decoy in preparation for an attack on the United States. Thus, a deliberately confused public would think that incoming bombers were spurious UFO sightings, would remain relatively unconcerned, and thus would probably not report them. Alternatively, if past experience was an accurate indicator, waves of incoming objects would set off a UFO panic, and the strategic lines of communication would be overwhelmed by incoming reports. Drawing on their experience in early 1952 when the volume of sighting reports had clogged non-military intelligence channels, the CIA and the Air Force were afraid that ability of the intelligence community to respond to an incoming attack by a hostile power would be crippled.

In addition, the CIA was afraid that the UFO craze could seriously undermine the credibility of the military. As a result, the CIA convened a meeting in Washington, D.C., from January 14-January 17,1953 at which a small group of distinguished non-military scientists rejected UFO evidence. Known as the Robertson Panel, the group was chaired by Dr. H. P. Robertson, formerly at Princeton and the California Institute of Technology and an expert in mathematics, cosmology, and relativity.[49]

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[48] Edgar Mauer, "Of Spots Before Their Eyes," Science, 19 December 1952, p. 693. *New York Times*, 29 July, 1952 p. 20, 28 July 1952, p. 5. *Milwaukee Journa*l, 30 July 1952, p. 2., 4 August, 1952, p.1. *San Francisco Chronicle*, 30 July 1952, p. 2.*Washington Post*, 30 July 1952, p. 1, *Milwaukee Journal*, 30 July, 1952, p. 2., *New York Times*, 1 August, 1952, p. 19, *Christian Science Monitor*, 30 July, 1952, p. 10, *New York Times*, 4 August 1952, p. 3, *Baltimore Sun* 31 July, 4 August, 1952, p. 1.

[49]Other panel members were: Professor Samuel A. Goudsmit, a theoretical physicist at the University of Michigan, and an associate of Einstein. Goudsmit and Professor George Uhlenbeck discovered electron spin in 1925 in Holland; Professor Luis Alvarez, Professor of Physics at University of California at Berkley and Vice President of the American Physical Society. A high-energy physicist, Alvarez served under Oppenheimer on the team that built the atomic bomb at Los Alamos. Dr. Alvarez received the Nobel Prize in Physics in 1968; Dr. Lloyd Berkener, a physicist, formerly of Brookhaven National Laboratory, and the Department of Terrestrial Magnetism at the Carnegie Institution of Washington. As a young man, Dr. Berkener was a member of the Byrd Antarctic Expedition in 1928-30. He headed the radar section of the Navy Bureau of Aeronautics; *Professor Thornton Page,* Professor of astronomy, Weslyean University. Formerly at the University of Chicago, Dr. Page was also the vice president of the American Association for the Advancement of Science (AAAS). Associate panel members were, J.; Allen Hynek and Frederick C. Durant. Hynek, an astronomer at the University of Ohio, had been a consultant to Project Blue Book. Durant was past president of the American Rocket Association and at the time President of the International Astronautical Federation.

After reviewing the data for parts of five days, the prestigious panel concluded that there was no evidence that UFOs presented a direct threat to national security. It was the indirect threat its members worried about, concluding that "having a military source fostering public concern in nocturnal meandering lights was possibly dangerous" (Jacobs1976, p. 82). Even though the panel did not find that the UFOs presented a direct threat to national security, it did find that the reports themselves posed a potentially dangerous threat. The panel further concluded:

> That the continued emphasis on the reporting of these phenomena does, in these parlous times, result in an orderly functioning of the protective organs of the body politic…We cite as examples the clogging of channels of communication by irrelevant reports, the danger of being led by continued false alarms to ignore real indications of hostile action, and the cultivation of a morbid national psychology in which skillful hostile propaganda could induce hysterical behavior and harmful distrust of duly constituted authority (CR 1969, Appendix U, 905-922).

The panel recommended that Project Blue Book's diffraction camera be used, not to collect UFO data, but to "allay public anxiety," and it recommended implementation of a radarscope plan, because it would help people understand that natural phenomena can show up on radarscopes. Third, and more importantly, it recommended " that national security agencies take immediate steps to strip Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired" (*Ibid*, p. 520). The final recommendation of the panel was the one that had the greatest long-term consequences for the Air Force:

> That the national security agencies institute policies on intelligence, training, and public education designed to prepare the material defenses and to react most effectively to true indications of hostile intent or action. We suggest that their aims may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena, to train personnel to recognize and reject false indications quickly and effectively, and to strengthen regular channels for the evaluation of and prompt reaction to true indications of hostile measures (*Ibid*., p. 520).

The Robertson panel outlined a detailed public education program with two purposes: "*training*" and "*debunking*." Training would help people identify known objects so that there would be "a marked reduction in UFO reports caused by misidentification and resultant confusion"(CR, pp. 915-917). Debunking would reduce public interest in UFOs and would therefore decrease the number of UFO reports. The education program, using mass media, would concentrate on

"actual case histories which had been puzzling at first but later explained. Such a program would reduce current gullibility of the public and consequently their susceptibility to clever hostile propaganda." The panel suggested that the government hire psychologists familiar with mass psychology as consultants. The report named a few candidates, among them Hadley Cantril who had written a book on the 1938 *War of the Worlds* broadcast. The panel also recommended that the Air Force engage companies that made army training films, Walt Disney Productions, and personalities such as Arthur Godfrey who would be a "valuable channel of communication reaching a mass audience of certain levels." Advertising experts would also be helpful (CR, p. 916; Jacobs 1976, pp. 83-85). The panel thought that this effort would take about one and a half to two years, and that at the end of this time, the danger related to flying saucers should have been greatly reduced, if not eliminated altogether. The panel's comments ended with a reference to groups such as the Civilian Flying Saucer Investigators and the Aerial Phenomena Research Organization.

> It was believed that such organizations should be watched because of their potentially great influence on mass thinking if widespread sightings should occur. The apparent irresponsibility and possible use of such groups for subversive purposes should be kept in mind (CR, p. 917).

In addition, the panel concluded, cooperation with other federal agencies would be required.

The Robertson Panel set the policy for Project Blue Book until it shut down 16 years later. It committed the Air Force to a long-term public relations battle to convince the public that UFOs were not real. The panel did not recommend declassification for the sighting reports and did not take advantage of the opportunity to move the project from the military to the academic scientific community. Rather, the Air Force took advantage of the opportunity to tighten security around all aspects of the project. Air Force personnel still were not permitted to release data or technical information to the public, thus increasing the public's suspicion that the Air Force was hiding something important.

In addition, the results of the Robertson Panel had significant public relations implications. The Air Force could now say that a body of important scientists had examined the data thoroughly and had found no evidence for the existence of anything unusual in the skies. In addition, the panel's conclusions gave the Air Force the best reason of all to keep the information out of the public eye: UFO reports posed a national security threat. The less said the better. For at

least five years afterward, the panel's very existence was classified. CIA historian Gerald K. Haines wrote:

> CIA officials wanted knowledge of any Agency interest in the subject of flying saucers carefully restricted, noting that not only that the Robertson Panel report was classified, but that any mention of the sponsorship of the Robertson panel was forbidden. This attitude would later cause the Agency major problems relating to its credibility (Haines, pp. 67-84).

Analysts of UFO policy have concluded that the Robertson Panel was used by the military for purposes other than investigation of reports of saucer sightings.

> The Robertson Panel could be described not so much as a "scientific" panel as a "propaganda" panel. Its purpose was to justify the CIA's new policy of keeping the UFO subject out of the public domain as much as possible. Labeling a 12-hour round table discussion of UFOs a "scientific study" is ludicrous, especially considering the fact that, in at least one instance, 1000 hours was spent on one case (Trementon, Utah, 1952) by Navy analysts and the conclusion was *unknown* (Fawcett 1984).

The CIA-sponsored Robertson panel had the effect of changing Blue Book's role from one of investigating the causes of the sightings to one designed specifically to keep the sighting reports to a minimum, or better yet, stop them completely. By the end of 1953, Project Blue Book had only three staff members, its official functions having been transferred to another command. Although Project Blue Book continued its work, it would never again regain the stature it once had, and would never again be able to conduct thorough investigations. "The goal of Blue Book was to lessen public hysteria in order to lower the number of reports and lessen the danger of missing signs of an impending Soviet attack" (Peebles 1994, p.109).

From 1953-1969, Project Blue Book's main thrust was public relations. For the Air Force, investigating reports of UFOs had turned out to be a public relations nightmare. In the aftermath of the early 1950s, the sightings were generally blamed on the 'Buck Rogers trauma'—technological advances in the postwar era, Cold War fears and science fiction (Billig, pp. 222-223).

In response, the Air Force conducted a substantial public relations effort, the ultimate goal of which was to minimize the number and strangeness[50] of UFO sightings. Although an October

[50] The "strangeness" of UFO reports is a concept pioneered by J. Allen Hynek, an astronomer who served as a consultant to the Air Force's Project Blue Book. Hynek developed a classification system designed to evaluate a UFO report on two axes: its strangeness rating and its probability rating. Under this conceptual framework, each sighing was assigned a number for each attribute: first, Hynek determined "how oddball"—or how much it "outraged common sense—the report was within its broad classification. The second aspect—the

1955 Air Force press release said that there were 1231 sightings reported in the first four months of 1955, only three percent were listed as unknown.

No matter what statistics the Air Force gave, it could not convince UFO believers to accept at face value its statements about its objectivity and its openness, especially since the Air Force would not make its classified files available to the public and refused to declassify them. By continuing to refute the charges that the Air Force took the existence of UFOs seriously, and at the same time refusing to declassify supporting information, the Air Force itself helped to create the perception of the UFO "cover-up" and "conspiracy." Throughout the 50s and 60s, the Air Force said the UFO sightings were nothing more than misinterpretations, yet it refused to release the evidence.

UFO literature[51] published between 1947 and 1969 illuminates an evolutionary trend with regard to interpretation of UFO sightings. Of the books published between 1950 and 1953, the majority were eyewitness accounts. Only one was a contactee book. From 1954 to 1956, a further eighteen were released. Contactee books made up fifty-five percent of the 1954-1956 books. The only skeptical book in the group was Donald H. Menzel's *Flying Saucers* (Peebles, 113). Menzel, an American scientist and professor of astronomy at Harvard University, became a celebrated skeptic during the 1950s and 1960s, focusing on various atmospheric phenomena[52] as sufficient explanations for UFOs. Below is a statement characteristic of Menzel's skeptical approach:

> I present evidence to show that this mysterious residue consists of the rags and tags of meteorological optics: mirages, reflections in mist, refractions and reflections of ice crystals. Some phenomena are probably related to the aurora; others to unusual forms of shooting stars…. Above all, there is not the slightest evidence to support the popular fantasy that saucers are interplanetary space ships, manned by beings from beyond the earth, however

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probability rating—assigned a value to the sighting along the lines: "how much would one bet, even considering the qualifications of the reporters, that what was reported *really* happened as reported." (Hynek, 1972, pp. 22-31) He assigned values between one and ten to each sighting, designed an SP diagram and classified reports accordingly. While the SP classification system provided Hynek with an orderly way to identify which sightings deserved further investigation, it does not appear to have been used by Condon.

[51] See Appendix B for a more comprehensive listing of UFO-related books.

[52] According to Menzel, most of the reports refer to reflections from material objects: distant planes, jet aircraft, vapor trails, miscellaneous balloons, newspapers, kites, birds, peculiar clouds, spider webs, insects, feathers, and so on. "Searchlights playing on thin layers of cloud or mist account for many of the records. Venus, Jupiter, various stars, bright fireballs, and even the moon shining through broken clouds, have been frequently identified as flying saucers."

> much some people want to believe in this unscientific, highly publicized interpretation of saucers. To them, I am the man who shot Santa Claus(Menzel 1953, p. vii).[53]

The most significant book, from a historical point of view, was Captain Edward J. Ruppelt's 1956 book, *The Report on Unidentified Flying Objects.* As noted above, Ruppelt was the former Director of Project Blue Book, and thus was able to give an insider's account of the investigation. He revealed the existence of the Twining Memo, establishing the Air Force investigation, which the Air Force had continued to deny; the secret report the *Estimate of the Situation*; the splits in Air Force opinion during the 1952 "flap"; and the existence of the Robertson Panel, a fact which the Air Force had historically denied.

In sum, the early history of ufology in America was made of an intricate web of social and political needs and fears, nurtured by the Cold War, directed by the political and tactical needs of the Air Force and its supporting governmental institutions. From the very beginning of the involvement of the U. S. government, it was clear that UFO sightings were not "real," and, more often than not, interfered with the business of government protecting National Security. This was the legacy that Edward U. Condon inherited as he began his landmark study, the *Scientific Study of Unidentified Flying Objects*. The social fabric was seething with bias, prejudice, and vested interest—hardly a comfortable climate in which to conduct a scientific study. The relationship between the scientific community and the Air Force was largely nonexistent, and the Air Force hierarchy, driven by fears of the Cold War, had largely predetermined the outcome of all previous studies since 1947. Believing in UFOs was taboo, and as was roundly demonstrated in the case of the Estimate of the Situation, it was punishable by loss of career and job. Documenting cases where there could be doubt—perhaps coupled with a suspicion that maybe there was something real to investigate—these were career-limiting actions for Air Force personnel. There was no scientific reason to study UFOs. If they posed no threat to national security, UFOs were irrelevant.

[53] Menzel added: "One devotee of the saucer cult wrote me: "Dr. Menzel—I wish that one of those space ships would land on top of Observatory Hill, and that a squad of the Little Men would seize you, put you in their ship and take you away to Venus. Then, maybe you'd believe!' Well," Menzel continued, "maybe I would!"

Chapter Two: The Space Age and the Creation of the Condon Committee

In addition to an escalation in the Cold War, the surprise launch of Sputnik I on October 4, 1957,brought an upsurge in reports of unidentified flying objects in the skies. Following a sighting in Levelland, Texas, on November 2, 1957, the Air Force received over 300 reports during the next six days; within three weeks, the number grew to 500 (Jacobs 1976, p. 137). Public pressure was intense and the Assistant Secretary of Defense requested the Air Technical Intelligence Center (ATIC) to give a preliminary analysis immediately to the press. The Air Force's final evaluation of the Levelland sightings was that they were due to "weather phenomena of an electrical nature, generally classified as 'Ball Lightening' or 'St. Elmo's Fire,' caused by stormy conditions in the area, including mist, rain, lightening and thunderstorms." According to the Air Force, the reported car engine and electrical system failures were caused by "wet electrical circuits." While all of the witnesses reported a light rain or a heavy mist in the area, none reported any storms or lightening.[54]

The Air Force was dismayed by the amount of publicity generated by this wave of sightings. NICAP (National Investigations Committee on Aerial Phenomena), a UFO research and advocacy organization created in August 1956 by UFO enthusiast Donald Keyhoe (Clark 1998, p 411), began to lobby Congress to hold public hearings. Keyhoe held discussions with staff of the Senate Subcommittee on Government Operations, chaired by Senator John McClelland. Claiming that such hearings would effectively generate additional publicity, and possibly another "saucer scare," compromising national security, the Air Force strongly opposed the hearings.[55] In

[54] "Air Intelligence Information Report," no. 141957, 2-8 November 1957, p. 16. See also *the New York Times*, 5 November, 1957, p. 22.

[55] A "saucer scare," or better yet, renewed public interest in UFOs, was exactly what Keyhoe wanted—for the more public interest, the greater the membership in his organization, and the stronger his public voice. Jacobs (1976, pp. 122-125, 145-150) notes that membership in flying saucer clubs is a function of the level of public coverage and interest. Up until the end of 1956, the flying saucer clubs tended to be small, short-lived, and local. Among the early groups were the Civilian Saucer Investigators (CSI) and the International Flying Saucer Bureau (IFSB). The CSI was technically oriented; and the IFSB was a contactee group (Peebles, 103; 114). Both groups folded within a few years. The Aerial Phenomena Research Organization (APRO) was founded by James and Carol Lorenzen. This group continued to exist until the 1980s. Since NICAP was founded "to direct a united scientific investigation of aerial phenomena and to correlate the findings toward a broader understanding of the possibilities and technical problems of space flight" (Peebles, 114). "If enough intelligent believers could get together and use all possible influence, through their congressmen, senators, and any other means at hand, it might force a quick policy change in Washington," (letter from Keyhoe to Lorenzen, 30 March, 1954). Analysis of selected NICAP membership rosters (Jacobs, 1976, Peebles) seems to indicate that the greater the public interest in UFOs, the greater the membership in UFO organizations and groups. Jacobs points out that the 1950s, there were over 150 contactee-type clubs, which reflected the success of contactees gaining publicity and generating public interest.

January 1958, representatives of the McClellend Subcommittee met with the Air Force to discuss its UFO findings and the issues involved in potential hearings. The Air Force convinced the subcommittee not to hold hearings, and in June 1958, held a “special, comprehensive briefing” for Ohio Representative John E. Henderson and other interested Congressmen (Jacobs 1976, p. 141).

In July 1960, members of the Senate Committee on Preparedness, the House Armed Forces Committee, the House Science and Astronautics Committee, and the CIA all requested briefings on UFOs. In 1960 and 1961, Congressional interest in UFOs ran high (Jacobs 1976, Clark 1998).

For 17 years, from 1947 to 1964, the UFO debate raged within the hierarchy of the Air Force and within the confines of special interest groups, pitting the Air Force against the UFO groups and the UFO groups one against another. In August 1965 a new wave of increased UFO sightings took place, beginning with sightings in Texas. By the end of 1965, ATIC had received 887 reports for the year (Jacobs 1976, p. 173, Strentz 1970, p. 47).

Hynek urged Blue Book to assemble a panel of civilian scientists to reevaluate UFO evidence, take a fresh look at the problem, and suggest where, if anywhere, Project Blue Book should focus its energies. In a September 28 letter to the Military Director of the Air Force Scientific Advisory Board, Major General E. B. LeBailley, the Air Force Director of Information, endorsed Hynek’s recommendation. On February 3, 1966, six scientists met to discuss what the project should do about the UFO phenomenon. Formally, the panel was called the Ad Hoc Committee to Review Project Blue Book, but was also known as the O’Brien Committee, referring to the name of its Chairman, Dr. Brian O’Brien. Serving on the Committee were: Dr. Brian O’Brien, then retired, who received his Ph.D. in physics from Yale University in 1922; Dr.Launor F. Carter, a psychologist who received his Ph.D. from Princeton in 1941; Dr. Dr Jesse Orlansky, a psychologist who received his Ph.D. from Columbia University in 1940; Dr. Richard Porter, an electrical engineer who received his Ph.D. from Yale in 1937; Dr. Carl Sagan, astronomer and space scientist who received his Ph.D. from Cornell in 1960; and Dr. Willis Ware, electrical engineer who received his Ph.D. from Princeton University in 1951. Their areas of expertise included optics (O’Brien); psychology (Carter); problems of behavioral science research for national security (Orlansky); engineering (Porter); the study of planetary atmospheres, the origin of life, and problems of extraterrestrial biology (Sagan); and the applications of computers to military and information processing problems (Ware). Sagan was

the only member of the group who was not associated with the Air Force Scientific Advisory Board. Sagan was the lone outsider.

Although none of the Committee members believed that the UFOs were extraterrestrial in origin (Clark 1998, p. 946), they thought that perhaps something interesting could be learned if the sightings were investigated "in more detail and depth than has been possible to date." In its discussion, the Committee Report noted:

> In the 19 years since the first UFO was sighted there has been no evidence that unidentified flying objects are a threat to our national security. Having arrived at this conclusion, the Committee then turned its attention to how the Air Force should handle the scientific aspects of the UFO problem. Unavoidably, these are also related to Air Force public relations, a subject on which the Committee is not expert. Thus, the recommendations that follow are made simply from the scientific point of view (CR, p. 542-543).

Concluding that the Air Force resources dedicated to this study had been limited (one officer, a sergeant, and a secretary), the Committee urged the Air Force to negotiate contracts "with a few selected universities to provide selected teams," to conduct UFO research. The universities should represent a good geographic distribution, and should be located within convenient distance of a base of the Air Force Systems Command (AFSC). Each AFSC base would assign an officer skilled in investigation to work with the nearby selected university. As they envisioned the project, 100 cases a year could be investigated, with 10 days devoted to each. Before the Air Force could act on the recommendations, however, a new wave of UFO reports intervened.

On March 20, 1966, eighty-seven women students and a civil defense director at Hillsdale College, Michigan, saw a football shaped, glowing object hovering over a swampy area a few hundred yards from the women's dormitory. The witnesses watched the object for four hours. The next day, five people—including two police officers—in Dexter, Michigan, saw a large glowing object rise from a swampy area on a farm, hover for a few minutes at about 1,000 feet, and then leave. Over one hundred witnesses saw objects during these two nights in these two Michigan cities that were 63 miles apart. Virtually every media outlet in the country carried the story, and the public pressure for the Air Force to investigate was great. Consequently, the Air Force sent Hynek to investigate and a press conference was held to report the results of the investigation. According to Jacobs:

> Whatever the impetus, the press conference became a singularly important event in the history of the UFO controversy. It was the largest press conference in the Detroit Press Club's history. Hynek described it as a "circus," with a melange of television cameramen, newspapermen, photographers, and others, all "clamoring for a single, spectacular

> explanation of the sightings." Hynek explained that the faint lights people had observed could have been the result of decaying vegetation that spontaneously ignited, and created a faint glow—this phenomenon is known as marsh gas.[56] As soon as he handed out the written press statement, Hynek recalled, he "watched with horror as one reporter scanned the page, found the phrase 'swamp gas," underlined it, and rushed for a telephone (Jacobs, p. 178).

According to journalism professor Herbert Strentz: "Press and public reaction to the Air Force's theory that the sightings were caused by swamp gas was prompt, wide ranging, and generally hostile" (Strentz, p. 52). Major media outlets throughout the nation carried story, which was met with general ridicule, humor, and some hostility. The headline in the *South Bend Tribune* editorial read: AIR FORCE INSULTS PUBLIC WITH SWAMP GAS THEORY. *Life Magazine* and the *New Yorker* [57] poked fun at the Air Force's odd explanation, and the *Christian Science Monitor* called for the scientific community to assemble and conduct a thorough and objective study of the "unexplainable." In early April 1966, CBS News began to investigate the UFO situation. The result was a nationally televised news show "UFOs: Fact, Fiction or Fantasy," narrated by Walter Cronkite. The show, aired in May 1966, presented the views of both sides, and concluded with Cronkite urging people to keep an open mind, because "yesterday's fantasy is tomorrow's reality" (Jacobs 1976, p. 180). In the early 1960s, anything was possible. Cronkite added that while fantasy improves science fiction, "science is more often served by fact."

During the March-April 1966 timeframe, the Air Force theory of swamp gas had been discredited and the public was in an uproar, clamoring for a better explanation. By mid-1966, stories of UFO reports had generated widespread press and public criticism of the Air Force's handling the UFO sightings. Charges and counter charges sailed back and forth and eventually the Members of Congress and the scientific community joined the debate over UFOs.

Some scientists expressed reservations about the methods the Air Force used in investigating these sighting reports, and the *Wall Street Journal* printed some of these opinions. Robert Risser, Director of the Oklahoma Science and Art Foundation Planetarium, criticized an Air Force analysis of the previous year when the Air Force claimed that the alleged sightings were really

[56] These "swamp lights" are caused by decaying vegetation releasing methane, hydrogen sulfide, and phosphine. Impurities in the phosphine spontaneously ignite in contact with air, creating a glowing light. The lights are dim, move erratically and sometimes are heard to give off a "popping" sound.

[57] Said the *New Yorker*: "We read the official explanation with sheer delight, marveling at their stupendous inadequacy. Marsh gas indeed! Marsh gas is more appropriate an image of that special tediousness one glimpses in even the best scientific minds"(*New Yorker*, 9 April 1966, pp. 32-34).

stars. Those stars, Risser said, were not visible at that time of year and "the Air Force must have had its star-finder upside down during August."[58]

Sighting reports remained at high levels for approximately three consecutive years, and resulting public interest continued to grow. The years 1964–1968 comprise a period in UFO history Clark calls the "great pandemic," where UFO sighting reports proliferated (Clark, 1998).

The public discussion about the March 20 and 21 sightings was so extensive that Gerald R. Ford, then the House Republican Minority Leader, and Weston E. Vivian, a Democratic Congressman from Michigan, formally called for Congressional Hearings. In a letter to the House Armed Services Committee requesting the hearings, Ford wrote: "The American public deserves a better explanation than that given by the Air Force." To "establish credulity [*sic*]," Ford recommended a committee investigation on the subject. On April 5, 1966, for the first time in the history of the UFO controversy, Congress held an open hearing on UFOs. Under the Chairmanship of Congressman L. Mendel Rivers, the committee invited three people to testify: Secretary of the Air Force Harold D. Brown; Project Blue Book Chief Hector Quintanilla; and Hynek, all associated with the Air Force. Secretary Brown told the Committee that while the Air Force had done an excellent job on UFOs, that perhaps there was room for "an even stronger emphasis on the scientific aspects." Hynek recommended that "a civilian panel of physical and social scientists…examine the UFO problem critically, for the express purpose of determining if a major problem exists."[59] After Chairman Rivers expressed enthusiasm for the idea, Brown thought that perhaps the establishment of a scientific panel would get the Air Force out of the UFO business; he gave the plan his full support. In 1966, Brown was overwhelmingly concerned with Vietnam. It is possible that his dumping of the UFO project was due to simple expediency, rather than an admission that the Air Force was not capable of handling the investigation. At the end of the hearing, the Committee expressed satisfaction that the Air Force agreed to contract out a scientific study to a university to investigate selected UFO sightings. The Air Force finally gave up its 17-year monopoly. Many ufologists claim that it was nothing short of an admission that Air Force stewardship of the investigations of the UFO sightings had been inadequate.

[58] *Wall Street Journal*, December 13, 1965, p. 1, 20.
[59] Hearings, *Unidentified Flying Objects*, 89th Congress, 2d session, 5 April 1966, pp. 6046-47. Hereafter referred to as *Hearings.*

Through its Office of Scientific Research (AFOSR), the Air Force formed a panel of six people to help carry out the O'Brien Committee recommendations.[60] The panel decided that its first task was to find a "lead university" to coordinate the study, put together the investigation teams, and issue findings. With assistance from the National Academy of Sciences, the panel came up with a list of twenty-five candidate universities. The task proved more difficult than anyone had imagined. Because of the heretical nature of the subject, most universities down turned the panel's request. Harvard, Massachusetts Institute of Technology, the University of North Carolina, and the University of California were not interested.

> Fearing that any contact with the concept of UFOs would damage their reputation, every school refused, despite the bait of a contract for several hundred thousand dollars. UFOs were anathema to academia (Swords 1995/96, p 153).

Colonel J. Thomas Ratchford, of AFOSR asked the National Center for Atmospheric Research (NCAR) in Boulder, Colorado, to conduct the study. Although NCAR turned him down, its Director, Dr. Walter Orr Roberts suggested that the University of Colorado, also in Boulder, might be interested in assuming a leadership role in the project. In August, Ratchford asked the University of Colorado if it was interested in leading the project. Perhaps to sweeten the pot, the Air Force offered several inducements: they offered to forgo cost-sharing regulations so that the University would have to pay only one dollar to receive $300,000. The Air Force then turned the grant into a contract, thereby enabling it to add $13,000 to the $300,000 for the cost of the university administering the program. A later cost extension raised the total cost of the project to $525,000. (Saunders and Harkins, pp. 28–29). Since the university had recently absorbed some legislative budget cuts, this sum may have been especially attractive to the university officials in search of additional funding (Jacobs, 184-185).

Still, university officials were uncertain about the merits of accepting the project. On August 9,1966, University of Colorado Assistant Dean Robert Low wrote an internal memo to E. James Archer, Dean of the Graduate School, and to Thurston E. Manning, Vice President and Dean of Faculties, on the pros and cons of accepting the Air Force proposed UFO study. Low wrote:

> I have pondered the UFO project and talked to a number of persons about it. Here are a few thoughts on the subject.

[60] As mentioned above, the panel consisted of O'Brien, and another member of the original ad hoc committee, two military personnel from the Air Force Scientific Advisory Board, a representative for the Air Force Office of Public Information, and Colonel Robert Hippler of the Office of Scientific Research. General James Ferguson, Deputy Chief of Staff for Research and Development, assumed the job of administering the panel's decisions.

Branscomb[61] is very much against it. Gordon Little thinks it would be a disaster. George Benton, likewise, is negative. Their arguments, combined, run like this: In order to undertake such a project, one has to approach it objectively. That is, one has to admit the possibility that such things as UFO's exist. It is not respectable to give serious consideration to such a possibility. Believers, in other words, remain outcasts. Branscomb suggested that one would have to go so far as to consider the possibility that saucers, if some of the observations are verified, behave according to a set of physical laws unknown to us. The simple act of admitting these possibilities just as possibilities puts us beyond the pale, and we would lose more in prestige in the scientific community than we could possibly gain by undertaking the investigation. Little indicated that you do these things sometimes if there is a real national need. You do them in spite of possible adverse consequences. But, in this case, there is no real need. Branscomb compares the situation to Rhine and the ESP study at Duke.

Walter Roberts, on the other hand, very much favors our undertaking it. He tried to get Will Kellogg, who is associate director of NCAR for the Laboratory of Atmospheric Sciences, to undertake it. Kellogg is very interested and almost did. He felt, however, that he was too committed to do it. Walt hopes very much that we will. He says that he has information that Colorado really is the first choice of the Air Force, that others have not been approached and turned it down. He thinks, contrary to Little, that there is a very urgent need to do it, and he feels that we will gain a great deal of favor among the right circles by performing a critically needed service. He said that we must do it right—objectively and critically—and avoid publicity and all that sort of thing. But having the project here would not put us in the category of scientific kooks.

Branscomb says it would be better if the National Academy takes a contract from the Air Force and then subcontracts the money to us to do the work. He feels it would look much better that way and I agree. There are, however, measures short of this that would accomplish almost the same thing—i.e., having a very distinguished group of consultants and/or advisers, having a committee in the Academy to whom our final report could be submitted.

Comments:

The analogy with ESP, Rhine, and Duke is only partially valid. The Duke study was done by believers who, after they had finished, convinced almost no one. Our study would be conducted almost exclusively by nonbelievers who, although they couldn't possibly prove a negative result, could and probably would add an impressive body of evidence that there is no reality to the observations. *The trick would be, I think, to describe the project so that, to the public, it would appear to be a totally objective study but, to the scientific community, would present the image of a group of nonbelievers trying their best to be objective but having an almost zero expectation of finding a saucer. One way to do this would be to stress investigation, not of the physical phenomena, rather of the people who do the observing—the psychology and sociology of person and groups who report seeing UFOs. If the emphasis*

[61] At the time, Lewis Branscomb was a Professor of Physics at the University of Colorado. He was a research physicist at the National Bureau of Standards from 1951-1969, and served as its Director from 1969 to 1972. President Johnson named him to the President's Scientific Advisory Committee in 1964, and he chaired the Committee on Space, Science, and Technology during Project Apollo. In 1972, he joined IBM, where he remained until his retirement in 1986. He was a friend and colleague of Condon's and when Condon died in 1974, Branscomb wrote his obituary for *Physics Today*.

were put here, rather than on examination of the old question of the physical reality of the saucers, I think the scientific community would quickly get the message. [Italics added for emphasis]

There is another reason, it seems to me, to do this. Except possibly in a field like optical meteorology, I can't imagine a paper coming out of the study that would be publishable in a prestigious physical science journal. I can quite easily imagine, however, that psychologists, sociologists, and psychiatrists might well generate scholarly publications as a result of their investigations of the saucer observers.

I have not, of course, heard the story presented by the Air Force people. That comes Wednesday morning, the 10th. Ed Condon and Will Kellogg *have* heard it, however, and they say the project is presented in a very reasonable light.

It is premature to have much of an opinion, but I'm inclined to feel at this early stage that, if we set up the thing right and take pains to get the proper people involved and have success in presenting the image we want to present to the scientific community, we could carry off the job to our benefit. At least, it ought not to be rejected out of hand.

Notes:

Walt Roberts pledged NCAR's cooperation and assistance, especially in optical meteorology, a very thinly populated field in the U.S. (in Boulder it is represented only at NCAR).

The University persons who have expressed an interest in the project so far are the chief types. We'll have to be sure, if we take on the work, that we can find properly qualified people who will actually do the work.[62]

This informal memo was the source of a great deal of controversy when it was discovered months later in the administrative files by a Condon Committee staff member, Roy Craig, in July of 1967. The key words are*: the trick would be.* Ufologists claim that Low meant the words literally, and that from the very beginning, Low intended the project to deceive. Low claims he meant "the trick is," in the sense of "the challenge is." This memo went down in history as evidence of extreme bias on the part of the Condon Committee, and later, during the study, two staff members were fired for leaking it. Others claim that Low meant to fool the public into thinking that the study was scientific, all the while convincing the scientific community that it was a foregone conclusion that UFOs were not real, and thus not worthy of scientific study.

Ratchford tried to interest Edward U. Condon, an internationally known physicist and former Head of the National Bureau of Standards, in being the project director. Initially, Condon was not interested in the job. He was in the process of revising his book on atomic spectra and

[62] Memo to: E James Archer and Thurston E. Manning, From: Robert J. Low, Subject: Some Thoughts on the UFO Project, 9 August, 1966, in the Collected Papers of Edward E. Condon, the American Philosophical Society (APS).

running for public election to the University of Colorado Board of Regents (Jacobs 1976, p. 185). According to Jacobs, Condon was ideally suited to the job.

> Condon's credentials made him the ideal person for the Air Force, which wanted the project leader to be a prestigious scientist and to have the proper political outlook. Condon fit the job description in every way. He had co-authored the first textbook on quantum mechanics in this country and he had written the standard work in the field of atomic spectra. He was a world-renowned physicist. He was also politically acceptable (Jacobs 1976).

Although Condon was not eager to take on the project, he did feel a certain amount of civic responsibility to do so, and in the end, he finally agreed to assume the project's leadership role.

On October 6, 1966, Thurston E. Manning signed the contract with the Air Force. The next day, the Air Force publicly announced that the University of Colorado would run the project. The project would soon be known by its informal name: The Condon Committee. Condon headed the team and Low became the project coordinator.

Condon and the Committee

It is important to understand Condon's character and the extent to which he was willing to fight for the principles embedded in the activity we have come to call science.

Edward U. Condon was born March 2, 1902, in Alamogordo, New Mexico. His father, William Condon was a civil engineer. His mother was Caroline Barr (Uhler) Condon. As a high school student in Oakland, CA., he was very interested in science. Before entering the University of California to study astronomy, he worked as a newspaper reporter for Oakland and San Francisco newspapers. His experience as a newspaperman probably contributed to his ability to translate his ideas into emphatic, colorful, and readily quotable language. He was later to write numerous scientific and technical articles for popular scientific and technical magazines, as well as research books and papers. In college, he turned his main interest from astronomy to physics, received his BA degree with highest honors in 1924, and his Ph. D. degree in 1926, both from the University of California at Berkeley. He studied in Gottingen, Germany from 1926–192763, and took a Professorship at Princeton in 1930, where he remained for seven years.

[63] Condon was the recipient of a National Research Council Fellowship. In an effort to stimulate the development of trained researchers in physics, chemistry, and mathematics, the Rockefeller Foundation had established the National Research Council fellowships after World War I. Awarded one of these fellowships, Condon studies in Gottingen and Munich in 1926-1927. In the spring of 1927, on his return to America, he lectured in physics at Columbia University. The next year, he was appointed assistant professor of physics at Princeton University; he left in 1929 to take a professorship at the University of Minnesota.

At Princeton, Condon concentrated on applications of new methods of quantum mechanics to problems of atomic and molecular structure and the interpretation of radioactivity. American industry was becoming increasingly interested in applied physics, and late in the thirties, many physicists entered the field of industrial research. In 1937, Condon, too, left the classroom for the industrial laboratory.

The Westinghouse Electric and Manufacturing Company in East Pittsburgh, Pennsylvania, appointed Condon associate director of its research laboratories, where research fellows dealt with pure science. Condon did not lose contact with the academic world, however; while at Westinghouse he served as advisory professor for the University of Pittsburgh. He valued both pure and applied research as important to furthering the national interest. In an address at Purdue University in 1942, at the opening of the Charles Benedict Stuart Laboratory of Applied Physics, he said: "I feel sure that those who are entrusted with furthering scientific research at colleges see this problem of applied physics in all its broad implications. They recognize, as we do in industry, that all physics is applied physics—so called pure physics being simply that part whose application is to satisfy the curiosity of the physicists."

At Westinghouse, Condon directed the work of a group of young physicists doing research at the only large atom smasher to be operated by an industrial research laboratory. With this equipment, the group carried out studies on uranium fission before the Government's atomic bomb project was started.

From the fall of 1940, Condon was engaged full time on various phases of research for military purposes. Serving as consultant to the National Defense Research committee, he helped to organize the radiation laboratory of the Massachusetts Institute of Technology, which conducted the research and development program on microwave radar. Later he organized and directed the research activities of Westinghouse in radar. Early in the war he assisted in organizing the rocket research program. Appointed to President Roosevelt's committee on Uranium Research in mid-1941, he helped in the studies that led to the launching in January, 1942, of the major effort which culminated in the successful development of the atomic bomb. In the fall of 1943, Condon left the radar work at Westinghouse to devote his entire time to the work on the atomic bomb project at the University of California; his work involved the separation of U-235 from U-238 with the use of mass spectrographs.

In October 1945 Condon was nominated by President Truman as director of the National Bureau of Standards, to succeed Dr. Lyman J. Briggs, who was retiring after twenty-eight years of service. At the time, the Bureau, a division of the Department of Commerce, was the Government's principal agency for basic research in physics, chemistry and engineering. Originally concerned with the standards for weights and measures, it then conducted basic research on fundamental science of great variety

On November 5, 1945, two days after his appointment to the Bureau of Standards was confirmed by the Senate, Condon was named Scientific Advisor to the Senate Special Committee on Atomic Energy. This Committee, which was headed by Senator Brian McMahon, reported unanimously to the Senate a bill providing for Federal operation of atomic energy plants by a civilian atomic energy commission.

In March 1946, Condon brought into the open the conflict between American scientists and military men for control of atomic energy in a speech before the Westinghouse Science Institute (reprinted in *Science,* April 5, 1946).

> Prominent scientists are denied the privilege of traveling abroad. Physicists are not allowed to discuss certain areas of their science with each other…Information essential to understanding is being denied to students in our universities, so that, if this situation were to continue, the young students…will get from their professors only watered down nature.

Condon lashed out at army officers who "were without knowledge, and so without competence," and who yet were in a position to censor exchange of scientific knowledge. "War research is not true science," he wrote in *the Saturday Review of Literature* in June, 1946. "Any attempt to perpetuate into peacetime the restrictive practices which were used during the war will have disastrous consequences…it spells death to our own activity."

During World War II, he had served with the Manhattan Project as Deputy Director of Los Alamos, the government laboratory that built the first atomic bombs.

In 1947, Condon was caught in the net of the madness[64] that was the House Un-American Activities Committee: on July 17, 1947 Congressman J. Parnell Thomas, Chairman of HUAC,

[64] Dalton Trumbo describes this period in America as the "Time of the Toad." He writes of Emile Zola, who, sometime before he became involved in the Dreyfus Affair, wrote an article called "The Toad." It purported to be his advice to a young writer who could not stomach the aggressive mendacity of a press which in 1890 was determined to plunge the citizens of the French Republic into disaster. Wrote Trumbo: "Zola explained to the young man his own method of inuring himself against newspaper columns. Each morning, over a period of time, he bought a toad in the marketplace and devoured it alive and whole. The toads cost threes *sous* each, and after a steady matutinal diet one could face almost any newspaper with a tranquil stomach, recognize and swallow the toad contained therein, and actually relish that which to healthy men not similarly immunized would be lethal poison. All

tipped off the *Washington Times-Herald* that a special committee was investigating Condon, later calling him "one of the weakest links in our security."[65] According to Walter Goodman (Goodman 1968), Thomas was attempting to cast doubt on all of the scientists who had pressed successfully to have the Atomic Energy Commission placed under civilian control.

When brought up before the House Un-American Activities Committee (HUAC) in 1947, Condon fought back. He did so to defend his reputation; more important however, are the principles of science Condon fought for—freedom from public politics, openness, and internationalism. To understand why Condon accepted the task of leading the UFO study, in spite of the stain of ridicule associated with the phenomena, it is essential to understand what he was fighting about when hauled before the HUAC to explain himself. The charges against him were:

- That his wife, the former Emilie Honzik, had been born in Czechoslovakia;
- That he had been chosen to head the National Bureau of Standards by Secretary of Commerce Henry A. Wallace. The report went on to claim that Wallace was a Communist;
- That he had associated with "unnamed Americans who are members of the Communist party;"[66]
- That he was a member of the executive committee of the American-Soviet Science Society;[67]
- That he had been one of the sponsors of the Southern Conference for Human Welfare and a friend of Harlow Shapley;[68]

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nations in the course of their histories have passed through periods which, to extend Zola's figure of speech, might be called The Time of the Toad: an epoch long or short as the temper of the people may permit, fatal or merely debilitating as the vitality of the people may determine, in which the nation turns upon itself in a kind of compulsive madness to deny all in its tradition that is clean, to exalt all that is vile, and to destroy any heretical minority which asserts toad-meat not to be the delicacy which governmental edict declares it. Triple heralds of the Time of the Toad are the loyalty oath, the compulsory revelation of faith, and the secret police." (See Trumbo, pp. 3-4)

[65] Saunders quotes Condon as replying from his hospital bed at Walter Reed Army Hospital in Bethesda, Maryland, where he was recovering from a bleeding ulcer, "It is true that I am one of the weakest links…that is very gratifying and the country can feel absolutely safe, for I am completely reliable, loyal, conscientious, and devoted to the interests of my country." (Saunders is quoting Rogers, 1967)

[66] This would have been a hard charge to refute, since HUAC never revealed the names of the alleged Communists. Specifically, the Committee claimed that Condon's participation in the American-Soviet Science Society indicated "the dangerous extremes to which Dr. Condon has gone in an effort to cooperate with Communist forces in the United States." (HUAC report to the full committee, p. 6). This was true; Condon was a firm believer in the importance of the international aspect of science, which reflected his commitment to the importance of the universalism of science, one of the norms that Merton uses to characterize the ethos of science.

[68] Shapley was a Harvard astronomer and a member of the Progressive Party. He was a frequent object of HUAC's scrutiny.

- That Condon and his wife were known to have associated with members of the Polish Embassy staff in Washington;
- That "in the guise of a reporter for the *Oakland Enquirer*, Condon had attended a Communist party meeting held in Berkeley in 1919;"[69]
- That a letter in the FBI files accused Condon of associating in 1947 with an individual alleged to have engaged in espionage activities on behalf of the Russians.

For Condon, the underlying issue and the one that mattered—to the Committee, to the early cold-war hysterics who saw Communists under every rock, and to Condon himself—was not even mentioned. The underlying issue was whether or not science would be allowed to retain its freedom and independence from the secrecy surrounding national security. Condon loudly challenged the claim that research must be kept safe from prying eyes and removed from the public domain. Condon understood exactly how science worked. HUAC, and especially J. Parnell Thomas, did not. Thomas "favored military control of atomic energy and saw exchanges of scientific information with other nations as the surrender of American technology and military advantage" (Wang, p. 135). Thomas' views shaped the HUAC subcommittee's March 1 1948 report on Condon.

How did Condon attract the interest of HUAC? In the fall of 1940, Condon began to work full time on military projects. As a consultant to the National Defense Research Committee, he helped to organize the radiation laboratory at MIT, the wartime venture responsible for the development of radar (Wang, p. 133.). Then he turned his attention to work on the atomic bomb. In 1943, Condon spent six weeks as Associate Director of Los Alamos under Robert J. Oppenheimer. There he fought for the right of scientists to engage in research in the open, rather than in secrecy. He had several arguments with General Leslie Groves about security regulations, and earned Groves' dedicated and long-term animosity. Condon could see that this was an intractable problem, and he resigned from Los Alamos.

> His [Condon's] resignation letter listed his opposition to the policy of compartmentalization as one of his main reasons for leaving. Like many of the Manhattan Project scientists, Condon considered compartmentalization, the idea that scientific information on the atomic bomb should only be shared with those considered to have a demonstrable need for it, an impediment to research. He also found other conditions, such as the censorship of mail and

[69] Absolutely true—he was and he did. Before he became a scientist, Condon was a reporter for the *Oakland Enquirer*.

> telephone calls and the possibility of complete militarization of Los Alamos, 'extreme' and 'morbidly depressing' (Wang, p. 133).[70]

Staunchly opposed to the concept of the "atomic secret," Condon was a politically active scientist and spoke in the defense of scientific freedom and the free and open exchange of knowledge. At the heart of his interests stood a firm commitment to internationalism. He believed that secrecy would stifle research and create a suspicious mindset that would damage international relations. In Condon's view, science must operate in the open, and international scientific cooperation and collaboration was the only sensible way to engage in scientific research. He actively promoted international cooperation in his writings and through his membership in the American-Soviet Science Society (Wang, p. 135-135).[71] Condon's internationalism, combined with his deep-seated opposition to secrecy in science, earned him intense and long-term scrutiny from HUAC. To those who thought that "atomic secrets" had to be preserved at all costs, U.S.-Soviet reciprocity in science could only mean subversion of America.

The scientific community rallied to Condon's defense. Albert Einstein and Harold C. Urey, speaking for the Emergency Committee of Atomic Scientists, pronounced HUAC's accusations "a disservice to the interests of the United States" (Wang, 139).[72] Among others, the Federation of American Scientists, the American Society of Biological Chemists, the Physical Society of Pittsburgh, the entire faculty of the Physics Department at Harvard University, the American Physical Society, and the Association of New York Scientists issued statements, resolutions and letters of support on Condon's behalf.[73] The American Association for the Advancement of Science (AAAS) and the National Academy of Sciences (NAS) followed suit. The AAAS issued a statement:

> The continuation of American scientific achievement for the purposes of both peace and war depends on the freedom and peace of mind of our scientists. They have no right to ask for

[70] Wang cites Edward Condon to J. Robert Oppenheimer, April 26, 1943, Oppenheimer Papers, Library of Congress.
[71] The American-Soviet Science Society was dedicated to promoting cooperative exchanges between American and Soviet scientists, a course of action which, to most scientists, was only reasonable. Throughout this period, Condon continued to insist that internationalism was essential in the conduct of research and that science, by its very nature, was opposed to secrecy. In 1946, Condon predicted that if an internationalist course were followed, the result would be "world friendship and cooperation, and not atomic war and the destruction of civilization" (Wang, p. 135, citing Condon, "Science and Our Future," *Science Magazine*, April 5, 1946, p. 417).
[72] Wang cites a press release, March 3, 1948, Box 6, Folder 8, Emergency Committee of Atomic Scientists Papers, University of Chicago.
[73] NAS collected papers, House on Un-American Activities Committee, National Academy of Sciences, Washington, D.C.

> special privileges, but they should have the rights accorded to every citizen, and should be protected against the treatment of the sort accorded to Dr. Condon (Wang, 139).

The National Academy of Sciences staunchly defended the institution of science and the role of open science in society.[74] The Washington Association of Scientists noted that the growing importance of scientific research to military advancements had been accompanied by a "distrust of scientists which arises because of their deep belief in freedom of intellectual activity and free exchange of information," which "were regarded with suspicion with some who do not understand how science operates"(Wang, 144).[75]

Most accounts of this episode in Condon's life, particularly the accounts appearing in UFO literature, portray Condon as an otherwise hapless victim of the Red Scare, a dedicated scientist who stood apart from the crowd by virtue of his energy, courage, and unwillingness to defer to authority. Most of the UFO literature (Fuller 1969, Clark 1998, Saunders 1968, Hynek 1998, Jacobs 1976, among others) chronicles Condon's lack of deference to institutional authority, his feisty courage, and independent thinking as reasons he was chosen to lead the scientific investigation of UFOs. "He would do the right thing, and not defer to authority in the face of contradictory facts," was the almost ubiquitous analysis of his peers.

While these were useful qualities for the leader of a scientific study of UFOs, they were not the most relevant characteristics of his persona. Condon was a perfect choice for the job because he had clearly demonstrated his record as a scrappy, dedicated fighter *for the ethos of science*.[76] In fact, Condon himself embodied the ethos and authority of science. Who better to investigate what had been perceived as the deviance of science (UFOs) from scientific norms than one who embodied science's norms and was willing to jeopardize his career for them? In this light, with Condon as head of the project, the answer was already clear: barring the discovery of new paradigms or extraordinary facts, there would be no reason to engage in the scientific study of UFOs in the future. For the Air Force, the remaining task was to develop a rationale for this

[74] NAS also cautioned that HUAC's treatment of Condon "may have the effect of deterring scientists from entering government employ, and may diminish the respect with which citizens regard opportunities for service to their government."(*Science News*, May 15, 1948, 312.) According to Wang, the nexus of this controversy was over control of atomic energy research in the United States. The scientific community believed in the importance of civilian control of atomic energy; the military industrial complex did not agree. Condon characterized HUAC's accusations as "part of an undercover attempt to smear civilian control of atomic energy." Some scientists perceived the attack on Condon as part of a larger effort to discredit scientists and persecute them for their political views.
[75] March 8, 1948, Box 69, Folder 12, FAS papers.
[76] For a complete discussion of the ethos of science, see Merton (1973, pp. 267-280).

conclusion and provide adequate documentation. An examination of Condon's papers related to the UFO investigation bears out the fact that he viewed ufology as a "crank" activity. His public speeches and statements, as well as correspondence, often reflected this attitude.[77]

As a scientist, Condon possessed important credentials. He was a recognized leader in the scientific community, he participated fully in the semi-formal institutions of science, and he held memberships in prestigious scientific organizations including: President of the American Physical Society, Member, the American Association of Physics Teachers, and the American Association for the Advancement of Science (AAAS). He was an invited member of the prestigious National Academy of Sciences (NAS).[78] By almost any measure, Edward U. Condon was the embodiment of the ethos of science, and fully participated in its accepted practices, rites, and rituals.[79]

In 1951 with his record cleared and with Parnell Thomas in Danbury Prison, convicted of taking kickbacks from his office staff, Condon left government to become head of research and development for the Corning Glass Works.

In October, 1954, Condon's Navy clearance was again re-established in connection with government contract research at Corning. When the clearance was dramatically suspended by intervention of the Secretary of the Navy, the press reported that Vice President Nixon, a former member of HUAC, implied in campaign speeches that he had requested the suspension.

Ten years later, after Condon had taught at Oberlin two years and Washington University at Saint Louis for seven, he moved to Boulder Colorado, as professor of physics and fellow of the Joint Institute for Laboratory Astrophysics. His security clearance was quietly restored, clearing his record once again.

When Condon accepted the offer to lead the University of Colorado study, he revealed his perception of the civic duty of a scientist in society. Aunders (1968), a psychologist and original staff member of the Condon Committee, provides an interesting insight into Condon's concept of the moral and patriotic obligations that scientists have in society. He quotes Condon as saying:

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[77] See Condon's collected papers at the American Philosophical Society, Philadelphia, PA.

[78] Years later, the President of the NAS would publicly certify that the Condon Committee's study was indeed scientific, in that it used to scientific method to arrive at its conclusions, much to the disbelief and dismay of the UFO proponents. It is important to note that the NAS report remained silent on the question of the Report's content and conclusions.

[79] See Merton (1973); Chubin (1990); Price (1963; 1967); Crane (1972); and Latour (1987; 1986) for extended analysis of the norms, rites and rituals of science.

> I guess it was just one of those appeals to government service—something that had to be done and they said, "You're the man to do it." Whether it's true or not, it's true that they said it and I fell for it. I suppose it was a little of the old newspaperman coming out; I don't know. It's a job that somebody had to do and I said I'd do it, so I'll do the best I can (Condon to Roger Harkin, quoted in Saunders, p. 46.).[80]

Saunders continues:

> Asked his opinion of the reality of the saucers, Condon told Harkins, "I guess you could say I'm an agnostic—that is, I have no opinion either way." However, he had told another reporter: I won't believe in outer-space saucers until I see one, touch one, get inside one [and] haul it into a laboratory and get some competent people to go over it with me. I would like to capture one. After all, that would be the discovery of the century—the discovery of many centuries—of the millennia, I suppose (Rogers, 1967).[81]

From the outset of the project, it became clear that the University community was more comfortable in viewing the investigation of UFOs as a civic duty (this concept was reinforced by the fact that it was the Air Force, representing the U.S. government that asked the University to undertake the project) rather than a bona fide scientific investigation. On October 9, 1968, the *Denver Post* quoted the Project's Coordinator, Robert J. Low, Assistant Dean of the University Graduate School, as saying that the Project "came 'pretty close' to the criteria of non-acceptability" in that the investigation of UFOs did not meet the "normal" research criteria of enhancing the University of Colorado's teaching mission. Low claimed that the study fell into a third area of university responsibility, that of public service. Low added: "When you're asked to do something (as opposed to applying for it) you don't say no—not to the Air Force" (Saunders 1968, p. 47).

From the beginning of its study, the Condon Committee had to deal with the ridicule factor. Since the early sightings of the air ships in the 1880s, the UFO phenomenon had been plagued by hoaxes, sensationalism, and dramatic, if not mythical, stories of human-alien encounters and abduction experiences. Most stories originated in eye-witness testimony, based upon perception,

[80] Saunders claims that what Condon may really have wanted was to bring additional funding to the University of Colorado which had recently sustained budget cuts. "Perhaps the answer lies in the financial bind in which the University perennially finds itself. The University was confronted by a recommendation from Republican Governor John Love's newly appointed Colorado Commission on Higher Education that the State Legislature cut its appropriation for the University by almost fifty percent more than the previous year." Saunders also noted that Condon had a "different answer for every reporter who asked him why he took on the UFO Project."

[81] Saunders notes that as the project progressed, Condon became increasingly irritated by reporters' questions, and was heard to refer to UFOs as "those damn UFOs (he pronounced them oooo-foes.)

and accompanied by little or no proven material evidence. The Condon Committee had no saucer pieces, no alien body parts, no material evidence[82] available to them for scientific analysis.

For the scientific community, a community that traditionally operates by the "test and verify" principle, the profile of UFO sightings, as well as their social and historical context, posed a serious problem: How could a scientist possibly do "science" in ufology? Since ufology is largely the exploration of uncertified, and perhaps uncertifiable, claim to knowledge, how could science function in ufology? Science cannot certify what appears to be uncertifiable. Science is not at its best working with anecdotal evidence. In addition, the exploration of uncertified, and perhaps the uncertifiable, puts the investigator at risk, professionally and politically. The fact that the "investigator" in ufology is usually the person who saw the UFO also presents a peculiar problem: the investigator literally functions as the data-gathering instrumentation for experiment. Thus, it is readily apparent that a large part of the "research documentation" for UFO sightings depends on the credibility of the witnesses. It seems that the effort to examine the credibility of the witness is really an attempt to calibrate the scientific accuracy of the instrumentation for investigation. The reporting forms developed by the Air Force for documenting a UFO sighting reflect this assessment. The bulk of the form focuses on the mental and emotional acuity, reliability, and stability of the witness to the alleged incident. Thus a large percentage of the Air Force-sponsored investigations into UFO sightings was dedicated to determining if the witness was credible. The early emphasis on witness credibility in Air Force studies pushed ufology away from the use of scientific method as the primary tool of analysis of what little material evidence there was (radar traces, photographs, etc.). This tradition of focusing on the credibility of the witness was an important factor of analysis, that, when coupled with the ridicule factor of UFO sightings, made scientific study of reports of UFO sightings problematic.

Saunders notes in the introduction of his account of the early days of the Condon Committee, that witnesses put their credibility at risk describing to authorities what they saw:

> I felt, I think, like many of the more rational persons who had seen UFOs and had been torn between reporting what they had seen or hiding the fact because of the fear of humiliation and embarrassment…This fear is justifiable. Ridicule, up to the last year or so, has been the order of the day. In the face of this, when a pilot or co-pilot, and engineer of an airliner sign affidavits that they have observed a UFO; when a policeman put such a statement on the official blotter; when radar men swear to it—all at the possible loss of prestige and their

[82] Other than photographs and radar tracings.

> jobs—attention must be paid to the subject…For the most part, scientists have turned their backs on this evidence. This is understandable. There has been no hardware produced, and scientists have to have some kind of hardware or repeatable data to work with. UFOs have been most uncooperative in supplying either, and the enormity of separating the chaff from the wheat in the evidence is an overwhelming and expensive job (Saunders, p. 10-11).

It is interesting to note that the first questionnaire prepared by the Condon Committee to be made available to those who claimed to have witnesses a sighting was a 21-page document prepared by University of Colorado psychologist William A. Scott. Only one page of the 27-page questionnaire inquired about the details of the sighting; the rest of the document asked psychological questions. Although Scott resigned from the project when his proposed questionnaire was rejected, it was clear from the outset that the Committee considered credibility of witness to be a key unit of analysis and an issue of considerable weight.

Early in the Committee's history, there was evidence of conflict and a divergence of opinion on how best to proceed. Saunders thought that the study of UFO reports would allow scientists to prove extraterrestrial visitation. Another psychologist on the committee, Wertheimer, argued that since the nature of alien intelligence is unknown, it is logically impossible to distinguish it from non-ET phenomena. Wertheimer began calling Saunders a quasi-believer (Swords, 1995/1996) which was reinforced by the fact that Saunders was the only member of the Committee to belong to a UFO Group (Saunders belonged to NICAP).

A year after the Condon Committee's creation, in January of 1967, the Committee was "largely directionless, beset with disagreements about how to proceed even as the various members of the staff went their own ways and pursued their own interests" (Clark, p. 949). When the Air Force announced that it would meet with the Committee on January 12, to check its progress on the study, Condon was "staggered" (Clark citing Low's use of the word, CR, p. 949). The meeting, dominated by Condon, provided no conclusive answers to what the Air Force requested. On January 16, AFSOR's Colonel Robert Hippler, who had been involved in the project from the very beginning and was at the meeting that day, wrote Condon and made it clear what he had in mind.

> The project ought to be able to come to an anti-ETH [Extra-terrestrial hypothesis] conclusion. Blue Book, he went on, badly wanted to be out of the UFO business, and if it took the Committee more time to come to a "proper recommendation," funds would be supplied, because even with the extra money, it would be cheaper than underwriting Blue Book for another decade. Low wrote to Hippler to thank him for his clarity, and soon

> afterwards, in a speech in upstate New York,[83] Condon was publicly repeating the same ideas. Michael D. Swords, an authority on the Committee, would observe that "the fix was in by January 1967" (Clark, p. 949, Swords 1995/1996).

During the course of 1967, Low made it clear that he did not believe in UFOs or the extraterrestrial hypothesis. Condon did much the same, and spoke to a wide variety of groups, and began to focus exclusively on the "crank" cases, as if by discrediting them, he could cast doubt on all the alleged sightings. Low compared UFOs to Nessies, and when he was in England, where he could have met with European experts on UFOs such as French researcher Aime Michel or Charles Bowen of *Flying Saucer Review*; he went instead to Loch Ness in search of Nessie stories (Saunders, 1968).

> It seems elementary that the two most important people for Low to see in Europe would have been Charles Bowen, Editor of *Flying Saucer Review*, and Aime Michel, the inventor of orthoteny.[84] As it happened Bowen was visiting Michel, and Low could have seen them both at once. Instead, he visited Loch Ness—home off the alleged monster—and explained later that this was relevant to UFOs because neither one exists and it was important to see how they were studying something that doesn't exist. As far as the rest of the staff was concerned, Low's grand tour, when he returned, was covered in one 20-minute summary that he delivered one afternoon while we were waiting for someone else who was 20 minutes late. We heard about Loch Ness, and about Stockholm and Vienna, and a little about Prague (Saunders, p. 135).

In early 1967, in a letter to a friend, a field investigator revealed what apparently were fairly common feelings of UFO field investigations staff.

> In a sense I have more to do with what actually gets done than "those in charge" because I am working full time and I see and hear everything that comes in, and hear it first hand….Most of the projects heads (all except one) have duties in their departments and are only part-time on this. Thank God that is the case as most of them contribute generously with
>
> the axe, and have little positive to offer, much less enthusiasm…It's as though the first concern of the group is to protect themselves from getting tainted by the quasi-scientific animal known as the UFO. By the time they have succeeded at this, their value as open-minded scientists has suffered greatly (Clark, p. 952).

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[83] Condon gave a speech in Corning, New York, which was covered by the *Elmira Star-Gazette*, in which he was quoted as saying that "UFOs are not the business of the Air Force." Condon used ill-chosen words, and spoke them with conviction in the very beginning of the ostensibly objective and scientific study. According to the article in the *Elmira Star Gazette*, Condon said: "It is my inclination to recommend right now that the government get out of this business. My attitude right now is that there is nothing to it." With a smile, he added: "'But I'm not supposed to reach a conclusion for another year."

[84] Author of *UFOs and the Straight Line Mystery.* Michel's theory of orthoteny deals with the hypothesis that the UFO sightings, worldwide fall along a straight line when plotted on a map of the world.

The claims that the "deck was stacked," and that there was a lack of scientific objectivity were common throughout the study among both staff and those on the outside.

In July 1967, the now famous Low memo (cited above) was discovered by accident by Roy Craig, one of the newer members of the project. He had a speech to give in Portland, Oregon, and asked Low where he might find useful information to prepare for his speech. Low suggested that the project administrative files might be helpful, and handed him the file called "AF Contract and Background." It was there that he found Low's August 1966 memo—referred to thereafter as the "trick memo." Condon's critics later used it as proof positive that the deck was stacked against an objective and honest study of UFOs from the beginning. The Low memo was the spark that lit the fuse. Craig showed it to Saunders, saying, "Tell me this doesn't give you a funny feeling in the stomach" (Saunders, 1968). The memo was copied and distributed to staff without the knowledge of Low and Condon. Saunders showed the memo to Keyhoe at NICAP, and NICAP showed the memo to Dr. James McDonald, a skeptical astronomer, who after extensive investigation, reversed his skeptical position on UFOs and became an authority and a "positive voice of science" in the controversy.

Condon and Low detested McDonald, but felt that they needed to consultant him about earlier statistical studies of UFOs. On January 19, 1968, Low called McDonald to ask him what he thought about earlier statistical studies. McDonald had been openly looking for a way to voice his deep concerns about the project. The conversation between Low and McDonald lasted 45 minutes and ended on a sour note (Saunders, p. 140). McDonald was not satisfied and he used this as an opening to write Low a long, detailed, 7-page single spaced letter on January 31, expressing his concerns about the project.

> In most scientific activities, a multiplicity of efforts, by groups who are all "effectively equal in the eyes of the law," controls the evolution of progress on the problem in question. Not so with the UFO problem. It will all hinge, for some years hence, on how Dr. Condon and you, and the small investigative staff of the Colorado project, proceed—on how energetically and how open-mindedly all of you attack this almost unprecedented scientific problem. For these reasons, I feel that to delay longer in speaking out my growing concerns would be to overlook important scientific obligations. Indeed, I feel I may have already delayed somewhat too long in so speaking out. Thus I cannot accept your suggestion to postpone my queries and criticisms until the end of 1968, when your final report will be made public (Saunders 1968, Clark, 1998).

Coming from one scientist to another, the charges McDonald raised were important ones, and if true, would constitute a violation of the consensual norms under which science habitually operates. As such, they are worth citing in detail.

- Dr. Condon has repeatedly been quoted in the press in statements of clearly negative tone, over a period that now spans months, while Project work was (and I hope still is) underway;
- In Dr. Condon's public statements, and in one important instance of a talk to his fellow scientists, one discerns a disturbing preoccupation with the crackpot aspects of the UFO problem;
- From Dr. Condon's own statements to me, from certain of the statements you have made to me, and from queries to members of the Project's investigative staff, I have concluded that Dr. Condon (whose good name underpins public and scientific confidence in the Project) is not personally examining witnesses of the type whose UFO accounts have kept the UFO question simmering for twenty years;
- On the other hand, in a number of exchanges with the Project Investigative staff, I have gained the very distinct impression that "Administrative communication with those Project members who are in direct touch with large amounts of case-material and who are doing the bulk of the witness-interviewing is so weak as to seem almost non-existent.
- The important class of "obfuscation cases"[85] whose thorough investigation I and others felt should constitute the cornerstone of the Project, does not appear to me to be under vigorous and searching scrutiny.

According to the letter, the implication of these points, when taken altogether, was "distressing." McDonald took Condon to task for biases, improper and inadequate field methodology, lack of proper oversight on the study, and lack of proper scientific method. Three pages later, McDonald quoted the key phrases from Low's memo of August 9, 1966, and offered his reaction: "…I am rather puzzled by the viewpoints expressed there, but I gather that they seem entirely straightforward, else this part of the record would, presumably, not be available for inspection in the open project files" (Saunders, p. 187).

McDonald has later pointed out that his reference to Low's "trick" section took up approximately two paragraphs of the seven-page letter and yet it was the only part of the letter that Condon or Low chose to respond to.

That Condon's reaction to the Low memo focused on the perceived breach of institutional protocol, and that he was obviously infuriated by Saunders' release of internal project material to

[85] By this McDonald means those cases or reports in which an official cover-up has been alleged.

outside critics, indicates that the issue Condon was primarily concerned with at this time was not criticism of his methods, but rather the challenge to his authority as head of the project.

Saunders was promptly fired and Harkins resigned. On February 24, Mary Lou Armstrong, Condon's Assistant Administrator tendered her resignation, noting that there was an "almost unanimous lack of confidence in Low as a project coordinator and in his exercise of power of that position." In addition, she later noted that she and other members of the staff resented Low's continued effort to isolate them from such UFO experts and specialists as Hynek, Vallee, McDonald, Hall and others, even as Low consulted anti-UFO scientists and consulted them on how the final report should be written (Saunders, Clark, 1998).

The conflict was covered in the May issue of *Look* magazine, where John G. Fuller, a reporter and the author of several books on UFOs, called the Condon Committee a "fiasco" and a "$500,000 trick." That same month, astronomer Frank Drake wrote the Chairman of the National Academy of Sciences, Dr. Frederick Seitz, a letter to urge that the Condon Committee's Report be discredited. When *Science* reported the controversy, Condon was so enraged that he resigned from the AAAS, *Science's* sponsor.

On September 19, 1967, Saunders talked with Condon and Low about ways of improving the Project's public image. Saunders protested the policy established by Low, with Condon's concurrence, that no information would be released until the publication of the final report. Saunders was concerned that if the study should find that the UFOs were indeed of extraterrestrial origin, the public would need to find out very gradually, so there would be no widespread panic in the streets.[86] Condon replied to Saunders that in the unlikely event that this was the conclusion, he would handle it, and take the conclusions directly to the President or to the Air Force. In either case, he maintained, one or both would make the decision on what to tell the American people. As far as Condon was concerned, it was none of Saunders' business (Saunders, Clark).

Throughout the life of the project, Condon made it clear that he did not believe "that there was anything to UFOs," an attitude apparently shared by Low. Other members of the Committee were not so sure; month by month, the staff, particularly Saunders and Roger Harkins, had a hard time believing that there was not something scientifically unusual in the phenomena. In

[86] The members of the Committee, especially Saunders, were sensitive to the panic produced by the famous H. G. Wells radio broadcast of the War of the Worlds. While this presented a problem for Saunders, Low and Condon were not particularly concerned about such an event, for they did not accord the ETI Hypothesis credibility.

November 1967, after a series of particularly negative speeches by Condon, including a mockingly jocular one to former colleagues at the National Bureau of Standards, Keyhoe withdrew the support of NICAP to the project.

By late spring, embroiled in controversy, and without the services of its most skilled and knowledgeable staff, the Condon Committee completed the investigative phase of its operation. From then on, the staff began compiling the report. In November, the final 1000-page manuscript, heavily padded with technical papers only marginally relevant to the ostensible subject of the report, was turned over to the NAS which was headed by Condon's old friend and former student, Frederick Seitz. The NAS panel gave the report its enthusiastic approval. On January 8, 1969, the headline in the *New York Times* read "UFO Finding: No Visits From Afar."

Chapter Three: Condon and the Report—Inside the Black Box[87]

When the Condon Report was released on January 8, 1969, UFO skeptics saw it as vindication of their long-held beliefs that UFO sighting reports were ridiculous. Predictably, UFO enthusiasts were unhappy with the report, for they immediately understood that acceptance of its conclusions meant the end of official interest in the UFO phenomenon. According to Condon, this was not surprising.

> These conclusions as expected were received by UFO enthusiasts with screams of indignation, and accusations of bias and "Air Force whitewash' and the like directed mainly at me as the one in charge of the project. Such behavior was expected because of the generally vituperative behavior of the UFO buffs toward those who do not accept their most extreme views. What lay ahead had already been made manifest by some of the behavior of several staff members of the project who began to co-operate in advance of its completion with individuals who were already preparing to discredit it in every way they could (CCP, Box 1, APL).[88]

The 1969 Bantam Paperback[89] edition of the report is 965 pages long,[90] approximately two inches thick and weighs exactly one pound. It is a dense report. Of the 965 pages, Condon wrote very little: six pages for the Conclusions and Recommendations, and 43 pages of rambling UFO history. The rest of the report is written by others, and, according to serious ufologists (Hynek and Vallee 1975, Hynek 1972, Sturrock 1974, 1999, Swords, 1995/1996,1976, among others) belays Condon's conclusion and offers more than enough evidence in the unsolved cases to

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[87] "Black box" is a term common to engineering and to the field of Science and Technology Studies (STS). Latour (1987, pp. 2-3) describes it thus: "the word **black box** is used by cyberneticians whenever a piece of machinery or a set of commands is too complex. In its place, they draw a little black box about which they need to know nothing but its input and output." In the context of the Condon Report, the black box refers to the making of the Condon Committee Report, rather than the report itself. Specifically, the task is to examine the Condon Report *in the making* in order to understand how and why the Report came out the way it did.

[88] Condon Speech, *UFOs I Have Loved and Lost*, Condon Committee Papers (CCP), Box 1, American Philosophical Library (APL) , Philadelphia, Pa., hereafter referred to as CCP, APL. There are two Condon Collections there: one of his papers, and the other of the papers pertaining to the Condon Committee. All references are to 72 linear feet of the collected papers of and pertaining to the Committee Activities

[89] The report was made available in three editions: (1) a photo duplicated edition of 1565 pages which was distributed by the Clearinghouse for Federal Scientific and Technical Information (Department of Commerce); (2) a paperback edition, issued by Bantam Books, New York, containing an introduction by Walter Sullivan, science editor of the *New York Times*; (3) A hardback edition published by E. P. Dutton, New York in May 1969. Condon notes that the paperback edition sold out, after selling over 100,000 copies.

[90] Very small print.

prove that, contrary to what Condon said in the Condon Report's conclusions, the phenomenon is indeed worth further scientific study.[91] Condon wrote:

> As indicated by its title, the emphasis of this study has been on attempting to learn from UFO reports anything that could be considered as adding to scientific knowledge. Our general conclusion is that nothing has come of the study of UFOs in the past 21 years that has added to scientific knowledge. Careful consideration of the record as it is available to us leads us to conclude that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby (CR 1969, p.1).

Oddly enough, nine paragraphs later, Condon makes a statement urging federal agencies, nonetheless, to consider funding UFO proposals.

> Therefore [because of the possibility of error on the part of scientists and science administrators], we think that all of the agencies of the federal government, and private foundations as well, ought to be willing to consider UFO research proposals along with the others submitted to them on an open-minded, unprejudiced basis. While we do not think at present that anything worthwhile is likely to come of such research, each individual case ought to be carefully considered on its own merits (CR 1969, p. 3).

Hynek (1972) and others cite this suggestion as proof of Condon's manipulative nature and narrative bad faith: that although he did not find any evidence to suggest that UFOs were worthy of scientific study, research institutions should consider UFO proposals for funding with an open mind. Over the years, Hynek submitted proposals to research agencies that were turned down. Commenting on Condon's bad faith, Hynek observed:

> Truly a masterpiece of throwing a scrap of political meat to the critic dogs. A more insincere statement can hardly be imagined, and surely Dr. Condon, master in the politico-scientific world, would be the first to recognize it as such. For one could easily imagine the plight of government funding agency, always hard-pressed for funds, were it to support such research in the face of Condon's crushing summary of the situation. There would quickly be scathing howls of complaint and letters to Congressmen from rejected applicants for support in established scientific fields, asking why their proposals were turned down while "this UFO nonsense" was being supported (Hynek 1973, p. 193).[92]

While this is a plausible explanation, it is convoluted, complex, and requires that Condon have spent a great deal of time plotting a strategy which would tell the truth as he saw it, and at

[91] It is ironic that the body of Condon's report would be viewed as contradicting his summary conclusions, and be used in the history of ufology to prove that in fact, by virtue of the 33 percent of unsolved cases Condon reported, it was clear that UFOs deserved further scientific study.

[92] Hynek added that to test out his theory, he submitted two serious proposals, one to the National Aeronautics and Space Administration and the other to the National Science Foundation. "Both were summarily rejected not because of scientific unworthiness (or so the rejection letters stated) but because of lack of funds." *Ibid.*, p. 193.

the same time throw critics a bone to keep them quiet.[93] Following the principle of Occam's Razor,[94] there is a more likely and simpler explanation: that Condon believed that science and scientists are fallible, that theories and conclusions of science change with new evidence, and that the ethos of science is democratic and demands that each research case be judged on its own merit. He was perfectly willing to entertain publicly the notion that the future might hold new discoveries making UFOs worthy of scientific study. This analysis can be supported by Condon's earlier defense of the freedom of science during the days of the House Un-American Activities Committee in the 1940s. While Condon may have been biased as a UFO critic,[95] and there is ample evidence that he was, it is more than likely that his staunch belief in the independence of the scientific process trumped his contempt for ufology.[96] Condon claimed that

[93] I have never seen any indication, even in Condon's collected papers at the American Philosophical Society Library in Philadelphia, that Condon was ever interested in making his critics comfortable. In fact, quite the opposite is true. More often than not, he was rancorous and vindictive. Two years after the American Association for the Advancement of Science (AAAS) held a UFO symposium which Carl Sagan organized with fellow astronomer Thornton Page, Condon was still trying to block Sagan's admission to the prestigious Cosmos Club in Washington, D.C. (Hynek, 1973) He opposed holding the UFO symposium in Boston "because it would be represented to the public as giving to UFOs a stamp of approval of the AAAS." CCP, Box 1, APL.

[94] William of Occam or Ockham (1280–1347) was an English philosopher whose teachings marked an important break with previous medieval philosophy. According to the position of nominalism, he rejected the Aristotelian Realism of St. Thomas Aquinas, specifically denying the existence of universals except in people's minds and language. In logic, Occam is remembered for his use of the principle of parsimony, forumlated as Occam's razor, which enjoined economy in explanation with the axiom "It is vain to do with more what can be done with less."

[95] As a result of the ridicule and stigma factors.

[96] In the closing pages of the summary and conclusions, Condon notes: "The subject of UFOs has been widely misrepresented to the public by a small number of individuals who have given sensationalized presentations in writings and public lectures. So far, as we can judge, not many people have been misled by such irresponsible behavior, but whatever effect there has been has been bad." His antipathy for ufology and his respect for the ethos of science can also be seen in his opinion on the place of ufology, even as a case study in school curricula. He strongly recommended that teachers refrain from giving students credit for school work based on their reading of the presently available UFO books and articles, saying: "We feel that children are educationally harmed by absorbing unsound and erroneous material as if it were scientifically well founded. Such study is harmful not merely because of the erroneous nature of the material itself, but also because such study retards the development of a critical faculty with regard to scientific evidence, which to some degree ought to be part of the education of every American." (CR, 1969, p. 5)

Hynek unfairly characterized his suggestion as insincere,[97] and that Condon knew full well that federal research agencies would reject proposals requesting funding to conduct UFO research.

> Hynek is unfair in saying that my statement, written in 1968, was insincere. As nearly everyone in this audience is aware the two agencies in question, NASA and NSF, have been short of funds, at least Hynek is not by any means the only person to whom this reason for rejection of proposals has been given. We of the Colorado project, felt that high standards should be applied to UFO grant proposals. Hynek's book does not give any details of the proposals he submitted. My feeling would be to vote against them if they were on a par with the pleadings and plans given in this book. In any case, Hynek's submission of proposals to NASA and NSF does not test my sincerity in recommending that they give careful consideration to UFO proposals (CCP, APL, *op. cit*).

Also, Condon, deeply committed to defending the authority of science, understood that scientists had little respect for authority other than scientific since they perceived that social and political authority had little normative influence on the conduct of science. In the Condon Report, he noted:

> Scientists are no respecters of authority. Our conclusion that study of UFO reports is not likely to advance science will not be uncritically accepted by them. Nor should it be, nor do we wish it to be. For scientists, it is our hope that the detailed analytical presentation of what we were able to do, and of what we were unable to do, will assist them in deciding whether or not they agree with our conclusions. Our hope is that the details of the report will help other scientists in seeing what the problems are and the difficulties of coping with them (CR, p. 2).

Condon's critics often cite the Condon Report as proof of the existence of UFOs, especially since 30 percent of the ninety-one cases Condon chose to evaluate remain unresolved. Hynek (1972, p. 195) said: "The Condon Report settled nothing. However, carefully read, the report constitutes about as good an argument for the study of the UFO phenomenon as could have been made in a short time, and by a group of specialists in their individual disciplines having no prior knowledge of the subject." Sturrock (1999, p. 42.), who along with Michael Swords is one of the top two

[97] It is worth remembering, also, that just as ufology at this time was culturally contingent on all that had gone on before, so, too, was science, and particularly, physics. Moyer (1992) has ably demonstrated that both the scientific method and its use are historically and culturally contingent. I have found no evidence that Condon did not believe that his analysis of UFOs was both scientific and right.

academic authorities on the Condon Report, comes to a similar conclusion: "It is also my opinion that there is much in the Condon Report that supports the proposition that an analysis of the totality of UFO reports would show that a signal emerges from the noise and that the signal is not readily comprehensible in terms of phenomena now well known to science. If this is so, then the report makes a case for further scientific study of UFO reports." Peebles (1994, p. 189) also examines the content of the report: "Of the ninety-one cases looked at, however, thirty were listed as unidentified. This was thirty-three percent, far higher than the Air Force rate. The believers, operating under the assumption that "unidentified" equals "alien spaceships," thought this negated the study's negative conclusion. McDonald, Hynek, Fuller, and Keyhoe all made this point."

In the book, *The Edge of Reality* (Hynek and Vallee 1975, p.221-223), Hynek and Arthur C. Hastings, a psychologist specializing in communications, discuss the value of the Condon Report in an dialogue titled *Should We Burn the Condon Report?*

HASTINGS: Speaking of the Condon Committee Report, how would you suggest people look at the book or understand it? If I have a copy of it, what do I make of it? How do I approach it?

VALLEE: We have a French colleague who suddenly developed an intense interest in the subject; when Dr. Hynek asked him, "How did you become convinced of the reality of the UFOs?" He said, "By reading the Condon Report, because when I saw that someone was taking so much trouble to explain something away, then I realized there must be something to it!"

We heard a suggestion the other day that seems to be very good. Someone said, let us republish the Condon Report *backwards.* The report has Condon's conclusions first, you see, conveying the impression everything is explained, and then a lot of irrelevant material (known as "padding") about how radar works, and then all the cases are found later. Well, a significant proportion of these cases is *unexplained*. What one should do is print the cases first and throw away all the pages about radar. In case after case, the investigators said "a definite UFO here" or "this case cannot be explained other than by an external intervention," and so on…then at the end, we would print the conclusions of Dr. Condon. I think people would gain a different perspective of his biases.

HYNEK: So the answer to your question of how should the Condon Report be read, the answer is *backwards.* The cases first, that's the only important thing, and virtually draw your own conclusions.

Throughout the study, Condon underestimated the passion and intensity on all sides of the debate. He recalls:

> I had some awareness of the passionate controversy that swirled around the subject, contributing added difficulty to the task of making a dispassionate study. The hazard proved to be much greater than was appreciated at the outset. Had I known of the extent of the emotional commitment of the UFO believers and the extremes of conduct to which their faith can lead them, I certainly never would have undertaken the study (CR, 1969, p. 548).

Condon had no love for the media, or the various groups dedicated to the study of UFOs. He labeled most articles on UFOs as "sensationalist"[98] and had favorites among the myriad UFO cartoons in the press.[99] At the conclusion of the project, he had adopted a policy of declining speaking invitations, for the job had taken its toll.

> Partly this was due to weariness accompanying a belief that I had wasted something more than two years of my life on an activity which perhaps should never have been undertaken in the first place. Partly it was due to not wanting to prolong the unpleasant personal experiences associated with the task (CCP, APL, Box 1).

As a leader of the study of UFOs and as the head of the Committee, Condon was faced with challenges that he was not well suited to address. First, he was admittedly biased, and had expressed his belief that there was nothing particularly worthy of scientific study in the UFO phenomena. (CCP, APL, Box 1) Second, he had already made it clear that he was reluctant to take on this task, and only did so because he considered it to be his civic duty. Third, as a physicist, he had little interest in using the tools of astronomy, marshalling armies to put together extensive databases, to search for patterns. And fourth, he was authoritarian by nature, and did not seem temperamentally suited to manage others.

Committee Factions

During the first three months of the study, there was very little agreement among the principals on what methodology to use to in the study, or even what the outcome should be (Saunders, Jacobs, Swords). The seven academics—Condon, Low, Roach, and the four psychologists, Cook Scott, Saunders, and Wertheimer—could not agree on how to proceed. According to Swords (1995, p.157):

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[98] Condon Speech, *UFOs I Have Loved and Lost*, CCP, APL, Box 1.

[99] "My favorite," he said, "is one showing a flying saucer with a row of windows showing clearly that the visitors from outer space are penguins. Their saucer is flying over an Arctic island on which there is a flock of earthling penguins. One of the penguin occupants of the saucer is saying to another, "This certainly confounds Professor Kwakk's theory that we are unique in the universe." *New Yorker*, 15 August, 1970." And that pretty much sums up how he felt about the whole subject.

> A major part of the difficulty was that the seven of them were there for widely different reasons. Condon felt that he was doing the Air Force a favor and did not want to be there at all. Low had promised Condon and the University and probably Walter Orr Roberts [of NCAR] that he would administer the project full time; but he also seems to have been genuinely intrigued by the mystery. Although they all had different slants on the subject, three of the psychologists (Cook, Scott and Wertheimer) were not really interested in UFOs. They were there to use the spectacular potential of UFO reports to assess the psychology of the witnesses. Their views on how to spend the Air Force's money were not overly central to the interests of the ufologists or even the Air Force. Saunders and Roach wanted to study UFOs—mysterious cases, old and new, individually in depth and statistically in bulk. The group even had problems communicating with one another. The psychologists tended to see problems one way, Saunders and Roach another. Low was torn between taking the Saunders and Roach approach because of his interest in the subject, and conforming with Condon's overridingly negative attitude about what they should be doing.

Saunders wanted to look for patterns in the UFO reports, in an effort to isolate the signal from the noise. In early December 1966 (Swords 1995, p. 158), Saunders sent a memo to the group outlining his proposed "framework for the analysis of UFOs." He asked Condon to allow him to input sighting reports into a computer, and run statistical analyses, searching for patterns in sightings. Condon refused. As it turns out, with the over 12,000 reports in the Air Force's UFO files, separating the signal from the noise was the biggest problem the committee faced, and one which they never appropriately addressed. Condon's critics claim that it was a serious mistake to include sightings that were obviously hoaxes or had a fairly prosaic explanation, such as the influence of atmospheric phenomena, for they just added to the noise and obscured the signal.

Wertheimer was interested in research nobody much cared about. As a cognitive psychologist and expert in perception, he wanted to focus on the way in which a witnessed event may become degraded as it passes through the socio-cognitive perceptual apparatus of the witness. Swords (1999)[100] characterized it thus:

> He insisted that when UFO witness perceives a distal stimulus of any kind, many distortions of that stimulus are possible (he would say likely), due to the environ-ment, the sense perceptors, the mind's internal functions and memory. The subsequent recalled "report" which the UFO investigator hears will be inaccurate in many ways. We must intensively study perceivers first before we can do anything with reports (Swords 1995, p. 158).

This, according to Swords, was the *pragmatic* part of the way Wertheimer wanted to frame the research problem. From a *philosophical* point of view, Wertheimer strongly opposed favorable

[100] Personal Correspondence.

treatment of the extraterrestrial hypothesis that the sightings were a result of the presence of extraterrestrial spacecraft.

In the final report, Saunders, Roach, Low, and Condon wanted to make some statement, either in support of or in opposition to, the extraterrestrial hypothesis (ETH, or sometimes referred to as ETI—Extraterrestrial Intelligence). Wertheimer strongly objected, noting that it neither could be proved or disproved and therefore should not be considered. His reasoning, now known in UFO history as the Wertheimer Hypothesis is as follows:

- Regarding the negative position (UFOs are not extraterrestrial spacecraft): A negative of this type cannot be proven. If one case is solved or a thousand cases are solved, all cases have not been solved, nor can they be. There will always be the possibility that any one of the cases is in doubt or unexplained is an alien spacecraft.
- Regarding the positive position, barring an extremely unlikely circumstance (like a landing with overt contact): The positive cannot be proven either. Any case or set of cases resisting identification is simply unknown.

Wertheimer invented the name "framasands," a nonsense word, to label things that cannot be operationally identified. Whenever a group discussion began about the extraterrestrial hypothesis during the next month or so, he would deflect it (often in a way that was offensive to Saunders personally) with interjections about framasands and how nothing else could be said about the matter (Swords, 1995, 158-9).

During group discussions, Wertheimer resorted to squelching the conversation by using the above positivist arguments. According to Saunders, "No matter how tiny a crack in the door we wanted to leave for ETI, Mike [Wertheimer] would always find a framasand to stuff into it." Werthheimer called Saunders a quasi-believer and questioned his objectivity.

> I don't know why he chose that term, or what effect he intended it to have—but I do know that it annoyed me. Within our group, the word "believer" had acquired all of the connotations of a four letter word, and "quasi-believer" was merely a more polite form of the word for use in mixed company (Saunders and Harkins 1968, pp. 76-80).

In a memorandum, Saunders pointed out to Wertheimer that his argument—that one could never prove the existence of ETI—was preposterous and had as much valuable logic as the argument of Zeno when he proved that it was impossible for an arrow ever to reach its target, since at points in its trajectory, it traveled halfway of the remaining distance to get there, and it is always possible to divide the remaining distance in half. "If Wertheimer was right," said

Saunders, "science was a waste of time because it could never prove anything." Saunders' memo pointed out the absurdity of the argument.

> The memo recognized two points: that *absolute empirical* proofs are impossible (so far as I'm concerned, even the Law of Gravity is just a probability) and that we cannot go through life without acting as if something is true. Obviously, this means we must sometimes make mistakes, but this is complicated by the fact that we can't always be sure exactly when or how we've made these mistakes (Saunders and Harkins 1968, p.79).

Insisting that the statistical probability of ETI was a very small number, *but not zero*, Saunders concluded: "Under the circumstances, I shall persist in attaching a non-zero probability to the 'ETI Hypothesis;' if this brands me as a 'quasi believer,' make the most of it! I shall also persist in urging that we do look at whatever data may have the greatest potential for altering our assessment of the multitude of risks which our investigation must face." (*Ibid.).*

Throughout the work of the Committee, Condon's actions and inaction played key roles in the shaping of the report. In a presentation before the Society for Scientific Exploration, Mike Swords, a scholar of the Condon Committee, discussed Condon's personal involvement with the project (Swords, 1999). Swords established the chronology and focus of Condon's participation in the project:

October-December, 1966:	Bosses the Project's initial phase, but is confused.
January-March, 1967:	Knows what the U.S. Air Force wants; lets Low run things.
April-May, 1967:	Fools around with goofy UFO reports and is in a good mood.
June-July 1967:	Gets static from the Project Team; his attempts to dominate research opinions is rejected; he reaches a total negative mindset on UFOs as a psychotic and dangerous subject
August-September, 1967:	Rejects Saunders views, and is even alarmed by them. Adopts a "don't give a damn" attitude, which leads to press gaff and near revolt of the staff.
October-December, 1967:	Retreats from activities to let Low pick up the pieces.
January-March, 1968:	After McDonald "drops the bomb" of the Low letter, Condon goes into battle; Saunders and Levine are fired. Great emotionality on the Project.
April-July, 1968:	Increasing and serious external events create a high pressure atmosphere and intractable "us" vs. "them" situation, politically and psychologically.

In other words, according to Swords, and there seems to be agreement among other UFO experts (Sturrock and Jacobs), Condon overreacted to both internal and external pressure, and did not approach the problem of the study of UFOs scientifically. According to Swords (1999), Low's approach, in the beginning, was a sound one, but was not followed, largely for non-scientific reasons.

By the end of December 1966, at the start of the Condon Committee investigation, there was no agreement among the seven on how best to proceed. The staff had certain biases. Condon, the physicist, thought the project undesirable, but Condon, the civic soldier, was interested in doing what his client, the Air Force, wanted. Saunders and Roach were UFO sympathetic. Scott, Wertheimer, and Cook thought that the work presented a great environment to study and test human perception, memory, and behavior. Low, an administrator, not a scientist, was loyal to the boss and to the Air Force funding source (Swords, 1999). Friction increased among and between staff: between Saunders and Wertheimer, between Low and Roach,[101] and between Scott and everyone else. Scott could not understand why he did not receive broad general support for the psychological testing he wanted to conduct. Meetings were tense, and according to Saunders and Swords, not very productive. The graduate student attached to the project, James Wadsworth, summed it up thus:

> Most of the project heads have duties in their departments and are only part-time on this. Thank god that is the case as most of them contribute generously with the axe and have little positive to offer, much less enthusiasm. I feel like each general meeting sets the whole project back. You wouldn't believe the chicken-shit security-niched academic egotism that goes on. It's as though the first concern of the group is to protect themselves from getting tainted by the quasi-scientific animal known as UFO. By the time they have succeeded at this, their value as open-minded scientists has suffered greatly. They are too busy maintaining a role to let loose what little creativity they have (Wadsworth, 1967). [102]

According to Swords (1999):

> So here were a bunch of naïve eggheads with a half a million bucks. How does one go about looking for UFOs? Originally, Condon thought it would be a good idea to assemble an investigations team, so that when a new case was reported, they could fly in fast, and see things for themselves. They had neither the equipment nor the timely reporting network to use this approach.

An internal battle over methodology developed: Saunders, Roach, and Low wanted to study the great cases and use extensive computer work to analyze the problem on one side. Condon, Scott,

[101] According to Swords, Low had a fairly low opinion of Roach's talents.

and Wertheimer supported research on the sighting observers, including "creating false UFO events to get baselines against which field studies and reports could be evaluated"(Swords, 1999). They had no interest in old cases. They were also divided on whether or not to address any hypothesis at all, including ETH.

> Two rather different sorts of people seemed to be involved: One (like Condon and Wertheimer) had no use for UFOs from the beginning. For them, "evidence for" meant something absolutely conclusive—an alien walking into the National Academy of Sciences and submitting to blood tests. The other group (Saunders, Roach, and Low) believed in exploration and were sympathetic to unusual possibilities. For them, "evidence for" meant information consistent with an unusual hypothesis, and not well handled by known mundane ones. They did not expect nor psychologically require, absolutes (Swords, 1999).

Things did not improve over the life of the project. After the January 1967 meeting with the Air Force, Scott, Cook, and Wertheimer were largely irrelevant. As mentioned earlier, Roach had an opportunity to return to his university and study "real" science. After several very public *faux pas* in speeches,[103] Condon retreated into virtual isolation from the project. "This left Low and Saunders staring at each other"(Swords, 1999).

In April 1967, Bob Low proposed an agenda and approach for the project. Categories were:

- Core Cases: these were puzzling cases, both old and new;
- Use of computers/photos/ radar, etc to analyze cases;
- Great scientists: these could be used to debate the esoteric points of science and to explain (or not) classic puzzlers;
- Use of external reviews to be applied to cases (Swords, 1999).

Low also addressed three questions: are there generally puzzling reports (UFO hypothesis); are any of these solid objects (Flying Saucer Hypothesis); and, are any of these extraterrestrial (ETH).

When McDonald brought the now-famous Low memo[104] to Condon's attention, politically, the internal committee situation worsened and made the question of methodology moot. No one

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[102] Discovered in Swords, 1995, p. 159.

[103] For example, Condon said in a speech in upstate New York that he didn't think the government had any business investigating UFOs, but that he "wasn't supposed to have an opinion for at least another year." More often than not, when he spoke he chose the cases that were obviously hoaxes, and ridiculed them. Reports of his speeches made the staff of his committee uncomfortable, particularly Saunders and Levine.

[104] This memo contained the infamous sentence penned by Low before the University of Colorado decided to accept the project. "The trick would be," Low wrote, "I think," to describe the project so that, to the public, it would appear a totally objective study but, to the scientific community, would present the image of a group of non-believers trying their best to be objective but having an almost zero expectation of finding a flying saucer."

had developed a strategy or viable methodology for conducting the study. By September 1967, allegedly most of the staff were considering resigning from the project (Swords 1995, p. 172). In November 1967, Condon moved to take complete control of the final report. Condon announced that he had fired Saunders for incompetence; his correspondence, however, tells a different story. He admits he fired Saunders because, by passing the Low memo to McDonald, he was disloyal to the project and insubordinate to Condon.

After Condon fired Saunders and Levine, dissatisfaction with Condon and the whole project grew on all fronts: in the media, in ufology, among ufologists, in Congress, among some scientists, and among members of the general public. As mentioned above, on April 29, 1968, *Look* Magazine ran the Fuller story on the disarray of the Condon Committee, the leaked memo, and the firings. Called *"Flying Saucer Fiasco*," the story hit like a bombshell. On April 30, 1968, several months after the firings, and only a day after a story on the firings appeared, Congressman Roush went to the well of the floor of the U.S. House of Representatives, and made a speech attacking Condon and the project.

> …the story in *Look* magazine raises grave doubts as to the scientific profundity and objectivity of the project conducted at the University of Colorado. The publication of this article will cast in doubt the result of that project in the minds of the American public; in the minds of the scientific community. We are poorer—$500,000 later—not richer in information about UFOs. Where do we go from here? I am not satisfied. The American public will not be satisfied.

The next day, he extended his remarks:

> Since reading the article and considering the situation there at the University, I have written to the Secretary of the Air Force asking for his comments on this deplorable situation and I have written the Comptroller General of the United States asking for his immediate investigation of the incidents involving the use of public moneys at the University of Colorado. There must be some adequate explanation for the events described in that article. If they are inaccurate, they must be corrected. If correct, they cast serious doubt about our universities' approach to Federal contracts: about the objectivity of educational institutions dedicated above all things to the disinterested pursuit of the truth insofar as facts can reveal this to us (*Congressional Record*, 30 April, 1968, vol. 114, p. 11043).

Saunders and Levine threatened a libel suit. McDonald wrote Condon threatening him with an expose and also wrote Frederick Seitz of the National Academy of Sciences. Astronomer Frank Drake wrote also Seitz asking him to discredit the Colorado study, *before the results were*

even in.[105] Even newspaper cartoons poked fun of the Committee's chaos. Swords describes the situation:

> Probably no scientist has had to face so many different types of hammer-blows as Condon faced after he fired Saunders and Levine. But it is difficult to feel too sorry for him. Condon did *not* act like a scientist on this job. In fact, he egregiously misbehaved. He lay back in his office fiddling with irrelevancies while the real work was done by others. He became emotional and paranoid about the subject, and allowed that to enter into his actions and writing. He became unjustly autocratic and rejected the input of many of his senior and junior staff, who were far more involved. He deliberately and publicly made the subject of his half-million grant appear ridiculous and beneath dignity, even though nearly his entire staff did not think so. He consistently opposed the cornerstone of his project administrator's plan ([putting together] the casebook) and, despite staff resistance, in the end, blocked it entirely (Swords 1995, pp. 176-7).

Before the Committee Report was made public, Condon wrote a draft letter to then Secretary of the Air Force, Harold Brown, which, according to hand-written notes on top, was never sent.[106] The letter, with corrections by Condon's hand, asks the Secretary to hold the Report in confidence, instead of releasing it to the public as had been previously agreed.

> The reason for requesting this change in procedure is that it was not foreseen that this project would be the subjects of attacks by irresponsible people or that I personally would be placed in jeopardy by lawsuits growing out of the conscientious performance of my duty as a scientific director. On April 28, 1968, at 11:00 a.m., I was served with two summonses initiating libel actions on the part of David Saunders and Norman E. Levine as plaintiffs, demanding damages in the amount of $165,000 each. As you know, I am nearing retirement age and if substantial judgements were to be made against me and no support were to be given me either by the University of Colorado or by the United States Government, I would have to spend my old age in the poorhouse…I emphasize that I am perfectly willing to defend my self before my scientific peers as to the adequacy of the work done and the opinions arrived at, and thereby also before the bar of public opinion ~~-where the study will probably be widely criticized~~ [sic], but I cannot afford to be subjected to lawsuits which could involve pecuniary loss to me. For this reason, I submit the report in confidence (APL, CP, Box 1, Condon to Brown).

In the rest of this nine-page letter, Condon details his case that "there is convincing evidence of a conspiratorial relation between various individuals having the object of discrediting the report in the eyes of the public in order to make it difficult for you to follow its recommendations."[107] According to Swords, these revelations illustrate the extent to which Condon had become paranoid and obsessed by those who marshaled their forces against the stance he had taken

[105] Italics are mine.

[107] CCP, APL, Box 8.

publicly—that UFOs were not worthy of scientific investigation. To protect himself from the expense of potential additional law suits, and to make sure that the Air Force was not forced fund further studies of UFOs, Condon was willing to have his report never see public scrutiny. He was tired, and he was afraid of being sued. From the notes he wrote on this draft letter, it appears that he never sent the letter to the Secretary of the Air Force.

During the study, when Condon gained explicit knowledge of the outcome the Air Force wanted from the study in January 1967, it again made moot the question of methodology. As mentioned earlier in this study, Colonel Hippler wrote Condon a letter, on his official Pentagon stationery, telling Condon what he thought the project should be doing. With the appropriate disclaimers—that these were his personal opinions—he made the argument in his letter that Colorado should "be able to come to an anti-extraterrestrial conclusion; and more importantly, he stated how seriously the Air Force wanted to get rid of the UFO project at Wright Patterson, or anywhere." (Swords 1995, p 178). He offered an extension, if Colorado did not have enough time to make "proper recommendations."[108]

According to Swords, "The fix was in by January 1967. At a January meeting with the Colorado Team and Colonel Robert Hippler and Dr. Thomas Ratchford of the Air Force, Hippler made it clear to Condon and Low that old cases were not to be studied, and ruled out the study of people and situations favored by the psychologist members of the Condon Committee. Hippler suggested that it would be more productive to study new cases, and made sure that the Condon team understood that the Air Force wanted out of the UFO business (Swords 1999).[109]

A strong recommendation in the final Committee Report that the Air Force should get out of the UFO business simply could not co-exist with a finding that UFOs, nonetheless, presented an interesting scientific problem worthy of further scientific study. Condon chose to meet the Air Force's needs.

In the end, the Air Force got what it wanted: no more Project Blue Book, no more Air Force studies. According to Swords, ufology nonetheless survived, in a non-governmental form, the negative conclusions and obvious bias of the Condon Report. Swords and others (Hynek, Vallee, Fuller, Peebles and Jacobs) point out that it was precisely because the report was so obviously biased, and its methods so notoriously unscientific, that anyone could easily see how incomplete

[108] This supports Swords' and Saunders' contention that Condon became paranoid toward the end of the study.

and biased it was. The thirty percent of reports in the unidentified category reinforced the truth of the report—as long as the reader read the report *backwards.* Said Swords:

> Emotionalism, paranoia, don't-tread-on-me anger, orders from the Air Force, fear of failing research funds: How many sources of unscientific behavior do we need? The beginning of the Colorado project's final report, as written by its director, should stand as one of the worst cases of scientific bias documentable in recent history. The embarrassment does not stop
>
> there, though. Now that the deed was done, the establishment rallied around the honored old scientist. The National Academy of Sciences reviewed the study (as required in the contract) and wholly approved it (National Academy of Sciences, 1969). *Nature* happily reviewed the report as "A Sledgehammer for Nuts. (*Nature*, 1969) Famous astronomer Fred Whipple praised Condon for doing "a fine job." (Whipple, 1969) Smithsonian administrator and former CIA logistics man for the famous 1953 UFO-debunking Robertson Panel, Fred Durant, pronounced the report the "Gravestone for UFOs." (Durant, 1970) Famed MIT physicist Philip Morrison said that the report would stand forever as a monument to the scientific method (Hynek, 1970). The examples are legion. Almost certainly these admiring scientists had no idea what had been going on and generally did not know what they were talking about. But are scientists supposed to be making strong comments about things they know nothing about? (Swords 1995/96, p. 179)

Retrospectively, Condon expressed regret at having accepted the task, on the grounds that there just was not much data worthy of scientific study.

> If I had to do it over again, I wouldn't, but not because of annoyances from the kooks. When I was asked to take it over, it never occurred to me that there was so much fraud and so little material worthy of serious study in something that the Air Force had paid so much attention to over the years. The most amazing thing to me was that no one there seems to have had guts enough to say "enough is enough" after following up the reports for about a year—instead of nearly 20! (APL, CP, Box 1, Condon to Cohen, November 3, 1971).

In 1970, the American Institute of Aeronautics and Astronautics (AIAA) published a technical committee report from a subcommittee created to arrive at an unbiased assessment of the status of the UFO problem. The subcommittee addressed the fundamental question: Does the UFO problem present a legitimate scientific problem deserving the attention of the science and engineering communities? Unlike the Condon Report,[110] members of the subcommittee subscribed to the conclusions of their report. In referring to Condon's "Summary of the Study," the subcommittee stated:

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[109] Provided to the author in a personal note; Swords also forwarded a copy of his presentation to a meeting of the Society for Scientific Exploration.

[110] The Condon Committee did not meet as a committee or behave like one. Its report does not reflect a consensus of its members. Rather the report is a product of some of its members, some staff, and outside freelancers.

> We did not find a basis in the report for his prediction [Condon's] that nothing of scientific value will come of further studies. Rather, the subcommittee found that "a phenomenon with such a high ratio of unexplained cases (about 30 percent) should arouse sufficient scientific curiosity to continue its study." In addition, the subcommittee concluded that "the only promising approach [would be] a continuing, moderate level effort with emphasis on improved data collection by objective means and on high quality scientific analysis" (Kuettner, 1970).

Condon took a negative view of the AIAA study. In a November 3, 1977, letter to writer Daniel Cohen, he noted: "Perhaps the most disgraceful thing in my view is that the American Institute of Aeronautics has a committee taking UFOs seriously." (APL, CP, Box 1, Condon to Cohen). The AIAA's interest in the UFO phenomenon was more than cursory: In December of 1968, the UFO subcommittee of the AIAA published a statement in its journal, *Astronautics and Aeronautics*, asking the scientific and engineering communities to examine the phenomenon. In the November 1970 issue of the journal, the UFO subcommittee criticized the conclusions of the Condon Report and encouraged further study of the UFO problem. In 1971, the AIAA published the details of two unexplained cases in the journal, seeking input from its membership, the scientific and engineering communities. As noted above, Condon was appalled that the AIAA gave UFOs any credence at all.

Framing the Research Problem

Condon's framing of the research problem for the study was *historically* contingent on all the investigations which had preceded his, from Project Sign to Project Blue Book, and on the requirements communicated to him by the Air Force, *culturally* contingent in that it reflected his training and practice as a physicist and his experience with HUAC, and *socially* contingent in that he had no intention of violating the norms of science and damaging his scientific and political career. While he may seem inconsistent, considering that he gave the Air Force what it wanted, Condon's scientific interest—and his firm belief that the study of UFOs was unworthy of scientific study to the point where he viewed ufology as an attack on the ethos of science—his goals lined up with the goals of the Air Force: to get rid of interest in and discussion of UFOs. The actions taken by the Condon Committee, and the resulting report, when considered in the broader context of the history of ufology in the United States, were not surprising. In the opening pages of the report, Condon states that "the emphasis of the study has been attempting to learn

from UFO reports anything that could be considered as adding to scientific knowledge" (CR, p. 1). His conclusion was that "nothing has come of the study of UFOs in the last twenty years that has added to scientific knowledge…further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby" (CR. p. 1).

Many writers have noted that the definition Condon chose to attach to the UFO phenomenon was not restrictive enough to separate clearly a potential signal from the noise, and thus encouraged the inclusion of reports that clearly were not worth studying in that they were either hoaxes, or obviously misidentified natural phenomena.

> An unidentified flying object (UFO, pronounced OO-FO) is here defined as the stimulus for a report made by one or more individuals of something seen in the sky (or an object thought to be capable of flight but seen when landed on the earth) which the observer could not identify as having an ordinary natural origin, which seemed to him sufficiently puzzling that he undertook to make a report of it to the police, to government officials, to the press, or perhaps to a representative of a private organization devoted to the study of such objects. Defined in this way, there is no question as to the existence of UFOs because UFO reports exist in very large numbers, and the stimulus for each report is, by this definition, an UFO. The problem then becomes that of learning to recognize the various kinds of stimuli that give rise to UFO reports (CR, p. 9).

In the past, others, the O'Brien committee, and the House Armed Services Committee, defined the problem differently. The problem was whether a *phenomenon existed* which was worthy of scientific study, not whether science had been advanced by the study of the UFO problem over the years. Instead of framing the research problem around whether or not a unique aerial phenomenon existed, Condon chose to define the research problem around the question of whether the past study had advanced science, as he knew it. Embedded in this question was the obvious negative answer: since there had never been a scientific study, nothing scientific could have been contributed to the scientific literature.

In addition to the inadequate definition of the research problem, there were other serious difficulties with the study: (1) the Condon Committee was hampered by the lack of a continuous project staff. Out of the original twelve only Low (Project Administrator) and two other full time staff members remained with the project for its full duration; (2) There was much personal conflict based on the philosophical issue of what assumptions to make when investigating cases; (3) None of the members saw the primary focus as determining whether UFOs constituted a scientifically anomalous phenomenon. One group, with Saunders as spokesman, thought the

committee should consider the extraterrestrial hypothesis and other theories about the origin of UFOs; this group wanted to look at as much of the data as possible. Another group, with Low as spokesman, thought the extraterrestrial theory (ETH) was nonsense and believed that the solution to the UFO mystery was to be found in the psychological makeup of the witnesses. This group wanted to focus on the psycho-social profiles of witnesses. The main conflict within the Committee was whether UFOs were indeed extraterrestrial phenomena.

From the beginning of the study, Condon realized that the public was primarily interested in the ET hypothesis; for its part, the Air Force wanted a definitive answer to the UFO question to curtail mounting public interest in the phenomena. Condon wrote astronomer Carl Sagan:

> Contrary to numerous accusations, I did not approach the study with a bias against the hypothesis (ETH) that some UFOs come from extraterrestrial places as visitors from other civilizations. The only "bias" of which I am aware, was against accepting conclusions without valid supporting information. I would love to discover visitors from other worlds, but I would hate to announce such a discovery without adequate data to back it up! Nor do I engage in vague and misleading claims that ETH is the "most probable hypothesis" to explain UFO sightings. Nor am I impressed by the number of reports: if they are unsound or deceptions, they do not become true by being numerous…I want to narrow the focus to ETH because that is what gives the subject its great popular interest. Much needs to be done to improve our under-standing of atmospheric optics and radar propagation anomalies, but let us not kid ourselves that the public is responding to that need. We need more serious research on these subjects, as we do on the psychology of distorted perception, cognition, self deception and chicanery, but understanding of these subjects will not be advanced by running around interviewing people who report seeing strange lights in the sky. I am sure of this with regard to physical phenomena. Several psychiatrists with whom I have talked feel that such UFO study is no help to understanding the psychological problems involved (Condon, NAS Archives, Division of Physics, Condon Study, General File).

In the same letter, Condon also noted that friends had told him that McDonald "has done me the honor of saying that the report is having a 'devastating effect on the prospects for major federal support for further study that he advocates." Condon closed the letter to Sagan thus: "That is all I have to say. I hope not to have to devote any more of my time to this silly nonsense. If people will only read it, I am sure that our report will stand on its own merits."

Condon's approach to addressing the UFO issue was historically contingent in two ways: first, he understood that the task was basically one of certifying prior conclusions, and thus a political one; and second, he also understood that the subject itself, given its history, was a manifest threat to the ethos of science, and would in no way add to the literature of science facts.

Study Methodology

The methodology Condon chose to address the research problem for his study was contingent on his training and practice in physics. Research methods in science are discipline-dependent. What works in experimental physics and quantum theory might not work for biologists or astronomers. In research areas such as meteorology and epidemiology, when the background noise is high and the signal-to-noise ratio low, it is necessary to develop techniques for statistical analysis using extensive data. In other words, it is necessary to look for *patterns of behavior*. When the experimental conditions can be controlled, however, and the results are repeatable and reproducible, it may be useful to analyze a single experiment in careful and precise detail.

The UFO problem seems to bear a closer resemblance to problems in meteorology than in physics. The pheonomena are observed, occur episodically, are not reproducible, and in large part, are identified by statistical gathering of data for possible organization into patterns. They are not experiments that can be replicated at will at the laboratory bench under controlled conditions.

Dr. Peter Sturrock (1999), an academic authority on the Condon Report and a physicist himself, points out that physicists tend to look for an outstanding experiment that, taken in isolation, conclusively proves or disproves some hypothesis.

> It is perhaps not surprising, therefore, that this is the approach adopted by Condon in appraising the information reported to him by his staff. To some extent, it reflects also the attitude of the scientific staff. …The UFO problem seems to be closer to astronomy than to physics. No single observation of the position of a single planet established Kepler's law. No single observation of the position and magnitude of a single star establishes that the sun is in a disk-shaped galaxy. Nor can data concerning a single star confirm a proposed theory of stellar evolution. In discussing astronomical problems, it is essential to combine evidence derived from many observations. The strength of the observational facts may become significant only when very large numbers of observations are combined (Sturrock 1999, p. 38).

Sturrock and others (Vallee, Hynek, Clark, Swords, Saunders, Craig) point out that Condon should have compiled a comprehensive catalogue of sightings, particularly of the unexplained reports, and initiated a program of pattern analysis based on accumulated reports. According to Sturrock, data derived from multiple sources that provide consistent evidence of patterns are significant by virtue of their consistency. This allows one to see patterns, and to draw

conclusions from the evidence at hand, where originally, there may have been no observable pattern. During the course of his research on UFO sightings, Vallee emphasized the usefulness of large databases many times; his suggestions, however, fell on the deaf ears of the Air Force and Condon.

If one does not look for patterns, and instead investigates each case independently, chances of discovering important patterns in the data are slim. This has been a major criticism of the report and the study itself and was pointed out to Condon by Roy Craig before Condon fired him.

According to Craig and Sturrock, Condon's methods in this study were not suitable to the problem at hand. In addition, they note that the definition Condon chose to identify the UFO phenomenon encouraged the inclusion of reports that could be easily solved in that they were either hoaxes, or obviously misidentified natural phenomena. In addition, the classification schemes that the staff of the Condon committee developed for analysis are fairly coarse in granularity.

While methodology is one of the choices that the scientist makes, it is not the only filter that scientists can use in searching for knowledge. According to Sturrock (1999, p. 39-44), Condon made other choices ill suited to the problem at hand. First, Condon's definition of the phenomenon itself allowed too much noise to accompany whatever signal there may have been in the evidence. Critics point out that Condon should have used a more restrictive definition of UFOs.

Hynek's presents a more restricted definition of UFOs. He describes a UFO report as "A statement by a person or persons judged responsible and psychologically normal by commonly accepted standard, describing a personal, visual, or instrumentally aided perception of an object or light in the sky or on the ground and/or its assumed physical effects, that does *not specify any known physical event, object, or process or any psychological event or process*" (italics mine, Hynek, 1972, found in Sturrock, 1999).

Condon also deviated from the principle that when one is considering one hypothesis (such as ETH), one should regard this hypothesis as "one member of a complete and mutually exclusive set of hypotheses" (Sturrock, 1999, p 40-41). It is of little use to argue that the evidence does not support one hypothesis when one doesn't know what the others are or hasn't considered them.

Sturrock and others (Ruppelt, Hynek, Jacobs, Saunders) point out that in evaluating a hypothesis, one must avoid the techniques of data reduction that depend on the truth or falsity of that hypothesis. In other words, one must avoid unacknowledged theory-dependent arguments. The Condon Report contains many cases of such theory-dependent arguments, some of which are more obvious than others. While this in and of itself is not a fatal flaw, one can certainly disagree with many of the assumptions underlying the arguments.

The Report claims that UFOs can't possibly be extraterrestrial visitors from other planets, because the distances are too great, and there is no known technology to travel at required speeds. *Says who?* What the report neglects to address is that if there were alien visitors, how do we know that they do not have technology which easily spans the distance?[111] Maybe they have a way of traveling that we cannot even imagine.[112] Sturrock uses the case of the sonic boom to illustrate the error of using limiting theory-dependent arguments.

> As a specific example, we find in the Condon Report the argument that a supersonic UFO should produce a sonic boom.(CR. 143). This is certainly true of every supersonic object that man has constructed. But we should *not* assume that a more advanced civilization could not find some way of traveling at supersonic speeds without producing a sonic boom (Sturrock 1999, pp. 40-41).

Theory-dependent arguments are frequently found in the pages of the Report. For example, Condon ruled out all explanations for any aspects of UFOs, UFO behaviors or theories that would call for technologies which violate the laws of physics as he knew them.

In addition to the above weakness in the approach that Condon used in framing the UFO problem, there are also flaws in the approach Condon used to research and gather the data. The investigation had no consensual intellectual framework or implementing structure. In fact, The Condon Report, does not reflect a tightly integrated research program (Sturrock, 1999, p. 19). The report lists 37 members of the project staff and notes other individuals were consulted. There is no indication of any coherent structure or organization of the staff into teams directed to study particular research problems. This lack of organizational discipline provided ample opportunity

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[111] I believe this to be a valid criticism of Condon's approach. That said, one must also acknowledge that Condon was limited, too, by his understanding of physics, and in a normative way, ruled out those things he considered to be absurd. Violating the laws of physics *as he understood them*, was obviously unacceptable.

[112] It is important to note here that Condon's understanding of physics and the scientific method was also historically contingent. It would be grossly unfair, therefore, not to mention that he drew his conclusions about physics and what lay within the possibility of science "fact" according to his understanding of science. He was an expert in quantum physics and radar, and this science clearly influenced his thinking about the alleged behavior and investigation of UFOs.

for duplicative and non-productive work on the part of staff. It also precluded any organization of the data by pattern, for study members tended to use their own methods of organizing information and data, without comparing notes. Thus, the very lack of structure in the Committee assignments contributed to the general fuzziness of the problem. Condon was listed as the Scientific Director of the Project, yet there is no record that he investigated even one case, or more importantly, participated in the research design of the study.

Report Structure

The functional structure of the Committee—or lack thereof—indicates a lack of public intellectual space allocated to discourse and dialogue. There was no outlet or structural instrument for consensus building, an important aspect of science. There is no record that the whole Committee ever met formally as a Committee to discuss aspects of cases or the writing of the report itself. This is important because, as Merton indicates, science operates in community, by consensus and negotiation of "facts." Science is a communal enterprise, yet there is no evidence that such activity ever took place in the Condon Study. The Report itself reflects this lack of community deliberation. Sturrock (1999) provides ample evidence for this interpretation.

Sturrock (1999) has analyzed the Condon Report in terms of the breakdown of staff activities. He begins with Section IV, which presents fifty-nine cases. He believes these to be the core of the report. He studies staff assignments, noting that they lend credence to the notion that Condon's exploration of UFO reports was not a rigorous scientific activity. The investigations were carried out unevenly. In this work the Director took no part; one principal investigator worked on two cases, another principal investigator on one case; the co-principal investigator took no part; the project coordinator worked on eight cases; Dr. Rothberg on one case; and Mr. Wadsworth on seventeen cases. Important contributions were made by Dr. Roy Craig (Ph.D., Physical Chemistry) and Dr. William K. Hartmann (Ph.D. Astronomy, who was actually located at the University of Arizona in Tucson), who are listed simply as "Staff members." Craig and Hartman each worked on fourteen cases (Sturrock, 1999 p. 20).

Sturrock analyzes the report section by section and summarizes the contributions made by various staff members in Table 3.1.

Table 3.1 Breakdown of Activities among Staff

		Condon Report			
		Sec. IV 59 cases	Sec. III 7 Summaries	Sec. V, VI 13 Chapters	Sec. I, II
Condon	Director	0	0	1	2
Cook	Principal Investigator	1	0	0	0
Roach	Principal Investigator	2	1	0	0
Scott	Co-Principal Investigator	0	0	0	0
Low	Project Coordinator	8	0	0	0
Levine	Research Associate	8	0	0	0
Presnell	Research Associate	0	0	0	0
Rothberg	Research Associate	1	0	0	0
Strentz	Research Associate	0	0	0	0
Wadsworth	Research Associate	17	0	0	0
Craig	"Staff"	13	3	0	0
Hartmann	"Staff"	14	1	0	0
Lee	"Staff"	0	1	0	0
Thayer	"Staff"	0	1	0	0
Others		≥30	0	12	0

Section V, concerning the historical aspects of the UFO phenomenon, comprises three chapters and Section VI, dealing with the "scientific context" contains 10 chapters. Sturrock notes that of these thirteen chapters, one was written by the Director. *The remaining twelve chapters were written by staff members not previously listed in this discussion.* (Italics mine). Condon's conclusions, stated in the introduction, do not take into account much of the material that followed—particularly with respect to the unexplained cases.

Throughout these reports, it appears that most of the casework was done by Low, the Project Coordinator, by three of the five research associates, and by staff members Craig and Hartmann. *Condon apparently did virtually none.* As noted above, it appears as if one group did the writing, while another did the investigating. We already know that the Committee did not meet to discuss the report in progress, and that thus it appears that and that there was very little space for public exchange of views among the staff to shape the Report.

There was no mechanism or structure in place to permit the negotiation of consensus, or agreement on certain "facts" of ufology. Staff and researchers tended to work alone (Saunders,

Craig, Swords, Sturrock) and each case stood alone on its merits and by itself proved nothing. No one looked for patterns among the sightings. No one focused on the *unexplained* cases. The lack of structure of the committee itself made it clear from the beginning that this was not a scientific investigation. In the vacuum created by Condon's failure to lead the Committee and issue methodological guidance, the investigation was bound to be less than rigorous.

As also noted above, Condon was a physicist, and he framed the research problem the way a physicist would (Sturrock 1999, p. 22). Sturrock, a physicist himself, likens the UFO phenomenon to problems of astronomy such as quasars, rather than to research problems of physics. He notes that with regard to the accumulation of data and pattern recognition, the problem is one closer to astronomy rather than to physics, for physics makes heavy use of hypothesis, while astronomy looks more for observed patterns (Sturrock, 1974). This is an important difference in phenomenological character, for different sorts of problems require different sorts of methodologies. Sturrock (1974, 1999) suggests that Condon used methods and tools inappropriate to the study of the problem of UFOs

Search for Certification of Condon Study

In 1965, *before* the study was awarded to the University of Colorado, the Air Force informally sounded out the National Academy of Sciences (NAS) on its willingness to evaluate the Air Force's program of studying UFO reports. In an inter-office memorandum of August 18, 1965, Robert Wilson wrote to Dr. John S. Coleman concerning Air Force interest in the Academy's participation.

> I have been informally contacted by the Air Force to sound us out on whether we might be receptive to an official request to scientifically evaluate the UFO program of the Air Force. I received the query by phone from Lt. Col. John Spaulding, who is Chief of the Civil Affairs Branch in the Air Force Secretary's Office of Information. He advises that his office believes a group of independent scientists could perform a very constructive service by reviewing the technical investigations of the Air Force on UFO (sic), undertaking any further research desired, and then rendering an independent report and evaluation of the phenomena. Col. Spaulding reports that although the AF has carefully investigated reported sightings, alleged
>
> photographs, radar data, etc., and concludes there is no evidence of extraterrestrial visitations, some groups repeatedly charge that the AF us suppressing information or is not objective, and hence the public is left confused.
>
> I asked whether the Air Force believes that there is a serious scientific question involved, and he responded that the question primarily concerns the AF's technical objectivity and the need for an authoritative independent judgement…The query is preliminary and does not have top-

> level cognizance at this time. However, Col. Spaulding intends to propose that we be officially approached by the Air Force or the Defense Department (NAS papers, *Op. Cit.).*

Eventually this memo made its way to the desk of Hugh Odishaw, NAS Program Officer, who discussed the request with the Committee's Staff Director, Dr. Hess. In a September 15 memo, Odishaw summarized Hess' views thus:

> While he would not welcome the undertaking of such a study by the Space Science Board or any other part of the Academy, in view of the basically unrewarding nature of the subject, he would not want to shut the door on the Air Force. If the Air Force has substantive problems of relationships where the public/ and or the congress and or/if the Air Force has serious concerns about its present program of investigating UFOs (perhaps particularly with a view toward simplifying procedures and reducing the burden of them), then Dr. Hess thinks that the Academy ought to be willing to consider a specific, simple study, using a very small ad hoc group. If the Academy receives a suitable request and if the President's office turns to the Space Science Board, Dr. Hess would attempt to be responsive (*Ibid*.).

On September 17, 1965, Coleman penned a short note at the bottom. It read: "N.B. I have told Wilson informally that the AF should not be encouraged to request this service. If they persist, we will have to respond. I do not expect they will."

It was clear from beginning that the Air Force considered the UFO sightings to be primarily a public relations problem and clearly knew in 1965 that the general public did not trust the Air Force's conclusions throughout the 20-year period of official investigations. What the Air Force really needed in 1965 was official certification of its knowledge and conclusions. With the new wave of sightings in 1966, and Dr. Hynek's identification of the Michigan sightings as swamp gas, the Air Force had to find a way to settle the issue of UFOs and regain its credibility. If it could not give the study responsibility away, and it could not, for no other agency would take it on, then it must find a way of certifying the study's conclusions by an external body of experts who were not tainted by Air Force involvement in the investigation. Clearly, an outside body was called for. Once the National Academy of Sciences made it clear that the Academy was not interested, the Air Force pursued other options.

The University of Colorado, with Condon's name and stature lent to the project, was a suitable solution. Nonetheless, even when complete, the final product still needed outside certification. The National Academy of Sciences was ideally positioned to certify the study results.

On October 29, 1969, the Academy appointed a panel of its members to engage in a "careful review of the scope, methodology, and findings of the Colordao study group" (NAS Papers, *op.*

cit, Seitz to Assistant Secretary of the Air Force, Alexander Flax). Before its release to the public, the study was transmitted to a Committee of the National Academy of Sciences' Space Science Board, chaired by Dr. Gerald Clemence, an astronomer at the U.S. Naval Observatory. In the NAS report itself, the charge to the panel was "to provide an independent assessment of the scope, methodology, and findings of the [University of Colorado] study *as reflected*[113] in the [University's] Report." (NAS papers, Review of the Condon Report). Essentially, this was an internal review of the report; the Academy did not choose to review the report within the context of other possible approaches or methodologies Condon could have used. Instead, it reviewed the report within the context of the way Condon had configured the report. The NAS review committee did not engage the Condon Report on any other than the Report's own terms.

The panel received the report on November 1, 1968; it convened on December 2, 1968, and again on January 6, 1969, to conclude its deliberations and to prepare its findings. This distinguished body fully endorsed the scope, methodology, and findings of the report. There is no evidence that the conclusions of the NAS panel were controversial within the group.

> We are unanimous in the opinion that this has been a very credible effort to apply objectively the relevant techniques of science to the solution of the UFO problem. The Report recognizes that there remain UFO sightings that are not easily explained. The Report does suggest, however, so many reasonable and possible direction [sic] in which an explanation may eventually be found, that there seems to be no reason to attribute them to an extraterrestrial source without evidence that is much more convincing. The Report also shows how difficult it is to apply scientific methods to the occasional transient sightings with any chance of success. While further study of particular aspects of the topic (e.g. atmospheric phenomena) may be useful, a study of UFOs in general is not a promising way to expand scientific understanding of the phenomena. On the basis of present knowledge the least likely
>
> explanation of UFOs is the hypothesis of extraterrestrial visitations by intelligent beings (NAS papers, Clemence Committee Report, *op. cit*.).

On the surface, it seems unlikely that a committee from the National Academy of Sciences would have certified the conclusions of the Condon Report—purportedly a scientific study–, when clearly, the science of the Condon report was conditioned by the biased understanding of UFOs in the 1960s. There are several possible explanations for the committee's conclusions:

1. They only met twice and had only seven weeks to study the Report;

[113] The italics are mine. These words were not in the original letter of request, but showed up in the Academy's statement of task. It is an important distinction to note. The NAS thus was not certifiying that the study itself was scientific—rather the task of the NAS was to certify whether or not the study, *as reflected in the report*, was scientific. This is a far different and far easier task.

2. They were influenced by Seitz, who was a former student of Condon's and who could be expected to support him;
3. They only read the Conclusion written by Condon, and did not compare the body of the Report with its Conclusion.
4. Based on their understanding of science and ufology, they believed that Condon had done the right thing, and agree with the conclusions he drew.

All four explanations are plausible; Sturrock (1999) suggests that it was more than likely that they did not read the whole report—only Condon's conclusion.

For instance, Sturrock notes in discussing the photographic cases, the panel asserts that "35 photographic cases were investigated…none proved to be real objects with high strangeness." While this statement mirrors Condon's discussion of the photographic evidence in section II of the report, Condon's statements do not accurately summarize the material presented in the report by Hartmann, who carried out the photographic analysis (Sturrock, 1999, p. 43-44). In his section on photographic evidence, Hartman discussed only 14 cases, and not the 35 cases Condon said he did in Condon's introduction. In addition, while Condon says that all were from the period 1966 to 1968, as it turns out, in Hartmann's section, only six were from that period.

Sturrock notes that in his section, "Summary of UFO Photographs," Condon also refers to analysis conducted by Everitt Merritt, who was not a member of the project staff and by Staff Sergeant Earl Schroeder, who analyzed two photographs published in *Look Magazine*. Sturrock notes that neither man was a member of the project team, and uses this analysis to prove both that Condon's Summary did not reflect the work of the Report, and further, that the Clemence Committee did not study the Report and took Condon's word that the conclusions matched the evidence.

As mentioned above, Sturrock makes a strong case for the casualness in the way in which the Clemence Committee certified the Condon Report. It is worth repeating that analyses of both Condon and the Clemence Committee were, themselves, historically contingent. It is possible, if not likely, that both Condon and members of the Clemence Committee believed that they had done the "right thing" by science, and that the study was indeed, scientific. Sturrock and Swords, of course, have the benefit of hindsight in their critiques and their interpretations are also historically conditioned.

Sturrock concludes that the Clemence Committee of the NAS only dealt with the Conclusion section written by Condon. If this be so, the Clemence Committee had an impossible task, and

could not certify that the study was scientific or that its methods were sound. It is unfortunate that there are no detailed written records of the Clemence Committee's debate in the files of the National Academy of Sciences. The only documents are administrative in nature—letters appointing members and notes of thanks to members for having served. In the papers of the National Academy of Sciences, there are no minutes of any meetings, and no exchange of letters between and among members regarding the content of the Clemence Committee findings.[114]

Clemence was an astronomer at the Naval Observatory in Washington, D.C., and some of his papers are housed in the Observatory's archives. A slender file exists pertaining to his study of the Condon Report. The correspondence among Committee members and the President of the National Academy, Dr. Frederick Seitz, provides some insight regarding the obvious political, not scientific, considerations which governed the constitution of the Academy Committee which was to review and certify the Condon Report.

> You will notice that all are members of the Academy, that six sections are represented, and that with any combination of the first choices and alternates, the geographical distribution is tolerable, as is the institutional representation…What may be more important, is that I have chosen men who are able to make up their minds, and who are not afraid to state their conclusions (Clemence to Seitz, 27 September, 1968, Naval Observatory Archives).[115]

Dr. David Dennison, then a professor of physics at the University of Michigan, and a member of the Clemence Committee, noted that one of the difficulties of even looking at the UFO problem—no matter what, was that the brush with ufology stains. In a hand-written post-script to his letter to Seitz accepting membership on the Clemence Committee, Dennison wrote:

> Fred, I am really looking forward to the review panel task with interest, but I can not help thinking that almost every encounter with UFOs results in some loss of skin for someone. In any case, though, I am prepared to take the risk! (Dennison to Seitz, October 21, 1968, CUFONOA).

Not everyone was as quick to engage. Dr. Lewis Branscomb, in a letter to the editor of *Science* considered the public debate about UFOs to be irrational and harmful to science.

> The public does not understand the lessons learned by centuries of hard experience that the mental discriminator for distinguishing evidence from mystery and truth from falsehood must be set at a level above the random noise of our experience…On the 'where there's smoke, there's fire" theory, many conclude that solid evidence must exist concerning the extraordinary nature of UFOs, evidence that is either being suppressed, ignored, or saved for

[114] An interesting project would be to track down the collected papers of all the Clemence Committee members to see whether one could piece together the debate.
[115] I shall refer to the Clemence UFO file at the Naval Observatory Archives henceforth as CUFONOA.

> later announcement by Condon…. The tragedy is that science apparently fails to perceive that public acceptance of the rationality of science is at stake (*Science*, vol. 161, no. 3848).

Branscomb felt strongly about the potential compromise of the rationality of science by the study of ufology that he asked Seitz to circulate copies of his letter to members of the Clemence Committee.

The Condon Report continues to generate interest and controversy; and in the scientific community, remains the benchmark for scientific studies of UFOs, precisely because it provided an acceptable, orthodox answer to the mysterious and sociologically unsettling question of UFOs. It is precisely because Condon Committee's study itself was culturally conditioned that it continues to generate controversy among ufologists. In addition, there is a small cadre of intrepid scientists who are willing to advocate discrete investigation of UFOs. [116]

The events surrounding the study also serve as a lightpost, reminding the scientist in no uncertain terms of the grave dangers inherent in the study of anomaly. According to Mike Swords, "The report had one serious lasting negative impact on the academic community. It demonstrated to them that being sympathetic to UFOs was a very dangerous thing if one wished to flourish within the oft-closed corridors and minds of the Establishment." According to Robert Park, Executive Director of the American Physical Society, the taboo remains today, for, in his words, "ufology is crank science, pseudo-science, and any scientist who studies this stuff ought to be ashamed."[117]

[116] From September 30-October 3, 1997, in Tarrytown, New York, Dr. Sturrock held a workshop composed of scientific experts to review the UFO problem. The panel concluded that UFOs should be studied scientifically.
[117] Personal conversation, Albuquerque, New Mexico, during a break at the 1999 Annual Meeting of the Society for Scientific Exploration.

Chapter Four: UFOs, Culture, and The Problem of Anomalies

Applying the Tools of STS

Isaac Asimov, long the doyen of writers on scientific subjects for the general public, defined the "problem" of UFO sightings thus:

> The trouble is that whatever the UFO phenomenon is, it comes and goes unexpectedly. There is no way of examining it systematically. It appears suddenly and accidentally, is partially seen, and is then more or less inaccurately reported. We remain dependent on occasional anecdotal accounts.[118]

What Asimov is identifying here is the conflict between what the public will accept as fact and what the scientific community is willing to accept. He also points out the apparent randomness of the phenomenon, and the difficulty of using scientific methodology to study a UFO sighting. Anecdotal accounts of phenomena such as UFOs provide science with difficult challenges of investigation. In the absence of prolonged contact or greater regularity in UFO visits, The best one can hope to do is to look for patterns in the noise.

Factors which contribute to the inherent conflict between the operations of society and science can be categorized as follows:

- The scientific context;
- Lack of scientific control of data;
- Social transmission of data outside the academy;
- The effect of ridicule on the science community;
- The role of conviction and belief of the common man.

In his study of the acceptance of meteorites as legitimate objects of scientific inquiry, Westrum (1978) introduces the notion of "summation effects"–or the accumulation of data points as corroborative evidence—into the discussion:

> In trying to understand how the savants came to believe in the reality of meteorites, I have found it very useful to borrow a concept from the physiology of the nervous system, the concept of summation (Usherwood, 1973, 88-93). This concept has to do with the way that signals are passed along the nerves. Often a single impulse arriving from a nerve fibre at a nerve synapse will not be transmitted unless another impulse arrives from another fibre within a short time. The synapse then integrates or 'sums' the signals from the fibres and

[118] *Ibid.*

> transmits its own signal accordingly. I would like to argue that in a very similar way, anomalous events are subject to "summation effects"—that is to say, that the reaction to reports of anomalous events is a function of the quantity and quality of reports received (Westrum, 1978, 469).

Westrum points out that both in the military and in the courts, concurrent evidence has a greater probative value (Cohen 1976, 65-78). This is the snowballing effect of multiple validations. It is safe to say that historically more evidence, or seeming proof, carries with it more weight.

Westrum concludes that in the case of meteorites, the way scientists responded to reports of anomalies was directly related to the scientific community's concerns about protecting its internal processes from external interference. Westrum notes that this protectiveness also holds true and plays a significant role in the way the scientific community, and specifically Edward Condon, responded to UFO reports and claims. In the case of the UFOs, the ethos of science (Merton 1973, 267-276) had clearly been breached by those alleging the reality of the phenomena, and science was under siege.

It was natural and predictable, that the general public would turn to scientists, in all their authority, for answers to perceived anomalies. This reliance on science for validation and legitimization of "fact" and "truth" continues to exist. If public science has a mission in addition to contributing to the national security, wealth, and power of the United States, it is as a judge of factual claims—thus, science functions as both legitimator and debunker of empirical claims. Debunking false claims protects the interests of the scientific community, and at the same time reinforces and advances the logic of scientific belief. A preponderance of claims outside of "normal science" (Kuhn, 1962) challenges both scientific beliefs and community; the scientific community *qua* institution struggles to maintain its sanctity, and scientists their paradigms. According to the Kuhnian model, it is only when there are simply too many anomalies, or summation effects, (Kuhn *1962*, Westrum 1978) that the balance shifts and science adopts a new way of looking at the phenomenon, accompanied by new theories of explanation.[119]

[119] This is Kuhn's oft-celebrated paradigm shift, which is the result of too many anomalies to maintain current theory to explain a scientific problem. Paradigm shifts require large-scale changes in the gestalt or scientific perception of a problem. See *Structure of Scientific Revolutions* for an impassioned discussion of paradigms, perceptions and science as a social institution.

The UFO as a Phenomenon

Unlike experiments in bench science, the first perception one might have of a UFO is through the personal experience of an alleged or perceived sighting. Unlike many scientific phenomena, the UFO phenomenon is primarily first a recounted experience. The instrument detecting the experience is a human being, complete with his or her individual apparatus of perception and orientation. An individual's perceptions occur within the stream of conscious and unconscious lived experiences, nestled in a framework of analysis constructed by the social matrix in which the human lives. If there is no category, UFO, for example, it is unlikely that an individual will report one. Westrum (1977) points out that it is possible that UFO waves in the United States conditioned the mind of the experiencer and gave rise to yet more sightings. (Clark 1998) For encounters where the witness has no recourse to prior experience, the witness attempts to define the unknown in terms of the known. Hynek calls this the escalation of hypotheses (Hynek 1972),[120] and Westrum places it clearly in a discussion of theories of perception, in which the contagion of experiences plays a role. Westrum notes that if the category UFO becomes semi-legitimate, it is likely to disperse throughout society. Westrum provides us with a good example of perceptual contagion in society:

> One example of a similar perceptual contagion was the "Seattle Windshield Pitting Epidemic," in which the residents of Seattle, Washington, suddenly began to see small pits appearing on their windshields. Subsequent research shows that the pits had always been there, but that people had never paid any attention to them. However, when it was suggested that the pits might be due to atomic radiation, an epidemic of reporting windshield pits began. Thus, stimuli which had always been present suddenly began to be interpreted and reported in a very different way (Medalia and Larsen, 1958, 180-186).[121]

As noted above, reporting a UFO entails a certain amount of exposure to both public and private ridicule. The uncertainty of how a report will be viewed, and its impact on the witness who had the experience play a significant role in whether or not the sighting is reported. The Condon Report found that only thirteen percent of the persons who stated that they had a UFO experience reported it in a public way. (CR, 1968) Many witnesses did not report their experiences at all, or until many years later, for fear of disapprobation (Hynek 1972, Vallee 1975, Ruppelt 1956).

[120] Cited by Westrum, 1977.
[121] As cited by Westrum, 1977, p 281.

Social Intelligence and the Process of Evaluating Anomalies

In the context of UFOs, by "social intelligence," refers to the social system that transmits anomaly reports to the scientist, who in this case, sits in judgement with regard to the legitimacy of the reported claim. Westrum (1977, p. 271) notes that there are two aspects to this operation: the set of factors that affects the interests of the scientific community; and the logic[122] of scientific belief.

How do scientists acquire evidence about UFOs?

There are three primary categories of steps in the process: the nature of the anomaly experience itself; the ways in which experiences are transformed into reports; and the transformation of reports as they pass through social channels—public, institutional, and scientific. At the very end of this process stream is "data"—the material on the basis of which the scientist evaluates a knowledge claim. This process can be summed up in the following chart, An Anomaly Evaluation Model (See Figure 1)[123]:

Figure 4.1: UFO Anomaly Evaluation Model: The Formation and Propagations of Knowledge Claims in Ufology (140k pdf file)

It is clear that throughout the process of evaluating the anomaly, many social filters are at work, and at many levels: at the level of the perceiver of the experience; the public, as it processes the experiencer's claim; the intermediary reporting institution, such as the Air Force or the local constabulary; and the scientists, as they interact often and sequentially with the public, institutional, and the scientific communities.[124] Decision makers all along the line decide what information to pass on up the line, and what information to withhold. We have already observed this phenomenon many times in the Air Force's decisions on what to tell the public and the top brass about UFOs (Ruppelt 1956, Hynek 1972).

It is easy to see that the scientist does not make his or her judgement in a vacuum and that the "data" the scientist receives about the observed phenomenon have already been processed by a

[122] Logic in its most primitive sense, meaning that which is already accepted by the scientific community as known.
[123] Reading Westrum gave me the general conceptual idea for this chart; any absurdities contained therein belong exclusively to me, however.
[124] Many of whom have already further processed information in the original experiencer's claim and have either added to it, subracted from it, or couched in it in their own perspective.

sequence of intermediaries. These activities are divided into three basic phases: Phase I consists of the experiencer and the social fabric in which he or she is embedded. Phase II encompasses the public's system of social intelligence, as well as any intermediary institutions involved between the UFO reports and the scientific community. In Phase III, the scientist interacts with his or her scientific community, through a series of scientific norms, networks, and perceptions of the experiences. It is during this social shaping of knowledge claims that the scientist also absorbs the perceptions of the intermediaries—such as public perceptions of the UFO experience, witnesses, the fabric of beliefs about UFOs and the public's beliefs about science. The end result of this process is that the scientist makes a pronouncement about the data received; it is either evidence of a UFO or it is not. It is either worthy of further study, or it is not. Throughout this process, the characteristics of the knowledge claims-making construct the bias of social data processing. More importantly, in the case of UFOs, the greater the approbation and taboo in Phases II and III, the greater the potential for the conclusion that the phenomenon does not ever merit future study. All phases and aspects of the formations and propagations of knowledge claims in ufology form almost infinite feedback loops, and at the same time, are reflexive.[125]

The brave and hardy scientific souls who chose to study UFOs in the second half of the 20th Century realized the extent to which the subject they studied violated the ethos of science, and as such, was taboo in the scientific community. J. Allen Hynek, the official astronomer associated for over 20 years with Air Force investigations, and Project Blue Book's "official scientist," reflects on the career-limiting potential of serious study of UFO reports:

> Of course, the late James McDonald thought there were things I should have done; Jim McDonald certainly berated me tremendously. He said: "You were the scientist on the job, you should have called this to their attention." I think if I had been twenty years older, a full professor, and a Member of the National Academy, I might have risked it, and I might have been listened to. But at that time, I was either an assistant or an associate professor at Ohio State, and Ohio State is not Harvard, nor the University of Chicago; frankly I was much more concerned with my own career at the time. I knew if I really came on waving my arms I would have been declared a nut and my services would no longer have been required. I don't think I would have done any more good. Certainly, any future effectiveness would have been
>
> shot down. I never would have been asked by Whipple to take charge of the satellite tracking program, I never would have gotten to Northwestern because the reason I became the Director at Northwestern was because I had a reputation in satellite tracking, with Sputnik,

[125] Thus, the diagram itself is a limited and limiting representation of the process.

> and so forth. My temperament is to play the waiting game; I always have, maybe it's my Czech background…they [the Air Force and Project Blue Book] could have had any one of a hundred consultants. I often say that I was the handiest astronomer. There were several other astronomers at Ohio State that they could have picked, but they recognized that I was a sort of tame astronomer. I was, at least, going along with the game. I wasn't fighting. Had I been fighting, I would have been kicked out. As long as I wasn't fighting them and calling them damn fools for not looking at the data better, I was tolerated. I was all right, and they frequently used my name. "This has been examined by Dr. Hynek, and he is an astronomer," and so forth. In one sense, I was definitely prostituting myself (Hynek and Vallee, 1975, 193; 209).

Initially, Hynek was a skeptic and concluded that all sightings could be attributed to misunderstood or mistaken natural phenomena. Toward the end of his work with Project Blue Book, he more frequently entertained the notion that behind the UFO reports lay a bona fide scientific phenomenon,[126] and one that merited additional study and explanation.[127]

To understand how the social apparatus contributes to anomaly evaluation, data reduction, and triage, it is worth looking not only at the behavior of those who claim to have seen a UFO, but at the behavior of the institutions which receive the sighting reports as well and filter the data as it is passed upward in the reporting chain.

Westrum's work on the behavior of official agencies (1977) provides useful insights on aspects of social conditioning as it relates to UFO reports. First, in the case of the press, if the

[126] "The common characteristics which surface from the vast UFO literature of UFO sightings are: physical craft which can maneuver with ease in our atmosphere, appear to b e unaffected by our gravity, and seem to abrogate at will the inertial properties of matter (as demonstrated by their ability to hover noiselessly, and then attain incredible accelerations). On occasion, they can be detected by radar, and sometimes confirmed by visual sightings at the same time. They are visible at night, by self-generated light, and are capable of producing physical effects: they leave landing marks, animals are disturbed by their presence and humans often became paralyzed in their presence. Other temporary physiological effects UFOs have been known to produce in humans are: blindness, nausea and headaches" (Hynek and Vallee, 1975 4-5).

[127] "What then is the consensus among serious investigators of the UFO phenomenon? What facts have survived the sifting and analysis to the present? Where are we now? We may summarize our position as follows: (1)truly unidentified sightings of events in the air or close to or on the ground exist; (2) The reported sightings that remain unexplained after serious examination fall into a relatively small number of fairly definite patterns of appearance and behavior; (3) The more educated and affluent the individuals, the more coherent and articulate is their UFO report, and the greater is their tendency to take the UFO problem seriously; (4) The UFO phenomenon is world-wide and experienced investigators agree on a set of basic reported characteristics; (5) The UFO phenomenon has been ignored or very imperfectly studied by the scientific fraternity; (6) The carefully gathered and sifted data are amenable to scientific study of an interdisciplinary nature but probably necessitating new departures in methodology" (Hynek and Vallee, 1975, pp., 1-10).

press prints UFO reports, many more experiences are reported. Conversely, if fewer reports appear in the press, fewer experiences are reported.[128] Thus, in the public arena, UFO reports are conditioned by social expectations.

So too with institutions. In this case, the reactions of the Air Force to the reports it received during its investigations shaped the type of reports it would receive in the future. The reward and or punishment system in place in the Air Force culture for accepting or not accepting, encouraging or not encouraging, certain categories of reports also shapes the data the scientist receives. Ruppelt (1956) noted how important feedback can be to those in the institution in deciding whether to transmit the reports, or even how to frame them. The Condon Report acknowledged the same problem.

> Air Force officers are human, and therefore interpret their duty quite differently. Some went to great lengths not to submit a report. Others took special delight in submitting all of the "easy" ones out of a zealous loyalty to their service, because the more "identifieds" they turn in, the higher would be the overall percentage of UFO reports explained(CR, 1968, note 20, 22).[129]

As noted previously, the official position of Blue Book was not to forward the *Estimate of the Situation* to top brass in Washington, D.C. The official position of the top brass in Washington, D.C., was to refuse to accept the report, and send it back, as if they had never received it. Air Force officialdom had made the determination that this report would bring them official trouble and possibly sanction. Therefore, Air Force brass determined that it was in their best interests not to accept Estimate of the Situation. Those who violated these norms were fired.

Westrum (1977) presents the scholar with yet another useful tool in this analysis, and one previously neglected: that of separating behaviors and responses to UFO sighting reports into *local* and *central* activities. While these categories overlap slightly with the *institution* versus the *public/individual* categories, they add an important dimension to the analysis. The objectives, rewards and sanctions of *local* actors may often, and it would appear do, diverge from those of *central* actors.

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[128] Some construe this as evidence that the UFO waves are socially conditioned. While contagion may be a factor in waves of reported sightings, it is not clear that it is the only explanation. Westrum compares waves of UFO sigthings to crime waves, which tend to intensify as the result of press coverage, and thus, to appear to be a creation of the press.

[129] Found in both Westrum and Condon at about the same time. Still, I credit both with stimulating my thinking and reinforcing my conclusions.

> A major problem with reports from agencies is the different social contexts in which reporters and evaluators exist. Those making the reports are "locals." They are on the spot, in the field, where the experiences actually take place. Believing themselves familiar with their own territory and equipment, they feel confident that they are able to discriminate anomalous from non-anomalous events. Those who eventually evaluate the reports exist in a different context, however, often in political capitals or headquarters far from the scene of action. They are "centrals," existing in the centre of communication networks whose transmissions they must evaluate in terms of the "big picture." When locals attempt to report anomalous events to the centrals, trouble is almost necessarily bound to ensue (Westrum, 1977, 286-287).

While the centrals are central in the eyes of the locals submitting the reports, the centrals are functionally locals when it comes to "reporting up" the chain of command. Thus, centrals, too, contribute to the distortion of evidence and the skewing of data, both up and down the reporting chain.

> The people on the UFO project began to think maybe the brass didn't consider them too sharp so they tried a new hypothesis: UFOs don't exist. In no time they found that this was easier to prove and it got recognition. Before, if an especially interesting UFO report came in and the Pentagon wanted an answer, all they'd get was an 'it could be real but we can't prove it.' Now such a report got a quick snappy, "It was a balloon,' and feathers were stuck in caps from ATIC up to the Pentagon. Everybody felt fine" (Ruppelt, *op. cit,* .p. 82).[130]

From 1947–53, the Air Force actively discouraged the reporting of UFOs and ufology. Periodically, in an effort to "make the reports just go away," the Air Force issued public statements, debunking the reported sightings, and questioning the credibility of the alleged witnesses. As noted earlier, the Robertson Panel even proposed a public education campaign to lessen the numbers of reported sightings. Westrum (1977) explores the nature of the relationship of sightings to official reports, and concludes that for every one report in the Air Force files, there would be 312 people who claimed a UFO experience.[131] Thus, we see that fear of ridicule influences the quality and quantity of UFO data and reports. What Westrum calls the social intelligence plays a significant role in the exploration of the UFO phenomenon. In making decisions about anomalies on the basis of social intelligence, the scientist has no choice but to take into account:

- The non random nature of the sample;

[130] While I first saw this quote in Ruppelt, it also appears in Westrum (1977), to support his argument on the behavior of the centrals when it comes to upper management.

[131] This is how he draws the conclusion: of the 3.75 million (estimated) people who claimed seeing UFOs previous to 1968, the University of Colorado Project found that 13 percent (or about 490,000) had reported their sightings. Between 1950 and 1969, the Air Force claimed to have received about 12,000 reports.

- The haphazard nature of the reporting process;
- The concealment of experiences by technically trained persons;
- The general low probability that a single sighting experience will reach the scientist through available channels.

To evaluate the reliability of UFO data, understanding how social intelligence processes, shapes and presents the UFO case is essential. It is also important to understand how the norms of the scientific community shape the formation and propagation of knowledge claims in ufology.

Scientific Community

When viewed from the outside, scientific competition seems to proceed in a relatively orderly way, among research groups, but from up close, scientific competition seems chaotic. Progress in science comes from these relatively orderly traditions. In ufology, unlike in traditional science, "discoveries" are often announced before they are assured. In ufology, communism in the Mertonian sense is absent. There is no sharing of data or results among ufologists. In fact, more often than not, among UFO seekers, it is a race among witnesses to see who gets to the press first. The UFO investigator rushes to be the first to announce a discovery or new theory, often by *ex cathedra* pronouncements. Anomalous claims and premature announcements do not fit with the paradigm of knowledge certification practiced by scientists In fact, ufology violates all of the tacit rules of science; there is no hierarchy, no UFO discipline with its concomitant information distribution networks and layers of status, and there is no obvious mechanism for refereeing publications, debates and theories. In addition, the choices of problems are radically different. Whereas science chooses solvable problems[132] ufology does not. It is impossible to prove either that UFOs don't exist or that they are spaceships from outer space.

When scientists join amateurs in the quest to explain anomalies, the scientist is largely discredited and his or her reputation damaged in the eyes of his or her peers. The scientist suffers from association with the "fringe subjects," and the mixed credentials of UFO seekers, coupled

[132] See Kuhn (1962), Laudan (1977), for a more extended discussion of problem choice (*Pace* Pitt). In principle, the scientist chooses problems that the tools of science can solve. For example, a scientist would probably not choose to study the question "why is there air?" "or why do humans exist?" These questions would be more appropriate to the domain of metaphysics, or religion. A scientist would prefer to focus on questions that science—his science—has a

with the perpetration of hoaxes and hyperboles. In normal science,[133] financial rewards and rewards of stature usually go hand in hand. The more credentialed a scientist is, the more he or she has access to funding for additional research from traditional funding institutions such as the National Science Foundation, the National Institute of Health or NASA. For the ufologist, scientists or not, there is no similar funding source. Thus, most scientists will avoid engaging in research in "fringe subjects"—subjects such as whether or not Nessies or UFOs exist, ESP and psychic phenomena.

It is important in this discussion to examine how science operates so that we may compare findings from this investigation to an understanding of how research in ufology, or with respect to other anomalies, proceeds. It is useful to apply some the tools of sociological analysis to pry open the black box (Latour 1987) of the Condon Committee and Report to cast light on how the Committee came to the conclusion it did.

For future work, extensive use of the Actor/network theory (who does what to whom and how, and who wins and who loses) as well as resource mobilization theory (who has what resources, how are they mobilized and deployed) would illuminate the controversy more, and would prove especially fruitful when it comes to the influence of the many UFO groups in the controversy.

Merton's model (1973) of how science functions as a community is also helpful in understanding how Condon's approach to the Report was a natural consequence of the context in that the UFO problem lies embedded. Studying Merton (1973) leads one to observe that natural sciences are objectively certified by means of methods that are presumably universal in scope. According to Merton, "the institutional goal of science is the extension of certified science."[134] As a social institution, science is marked by an ethos, or a complex of values and norms that are held to be binding to scientists who embrace them. Condon was first a scientist, then a physicist, and finally the leader of the UFO study. As demonstrated in his correspondence (APL, CP, *op. cit.*) and by his refusal to be intimidated by the HUAC Committee, Condon upheld the norms of

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chance of answering. Questions in this category might be: "what is the chemical composition of the air we breathe?" or "how does the human body process food?"

[133] Merton's norms, and particularly discussions of the system of rewards and punishments in science, apply to what Kuhn terms normal science…that period when science proceeds methodically on the filling in and refining of theories. Kuhn refers to this activity as the "mopping up" in science. It is only when anomalies accumulate and the current theories can no longer explain observed phenomena. When this happens there is a "gestalt shift" which finally gives rise to a revolution in science. For a full discussion, see *The Structure of Scientific Revolutions,* Thomas A. Kuhn.

the scientific community in which he participated. According to Merton, science norms are firmly prescriptive.

> The norms are expressed in the form of prescriptions, proscriptions, preferences and permissions. They are legitimized in terms of institutional values. These imperatives [or norms] transmitted by precept and example, and reinforced by sanctions, are in varying degrees internalized by the scientist, thus fashioning his scientific conscience… Although the ethos of science has not been codified, it can be inferred from the moral consensus of scientists as expressed in use and wont, in countless writings on the scientific spirit and in moral indignation directed toward contraventions of the ethos.[135]

The norms of science are transferred by socialization and reinforced by punishments and rewards. This is particularly clear when science and scientists depart from the posited norms as they do in ufology. Social responses to the violation of norms are key points of study for the researcher trying to understand how the interaction between science and society shapes the practices and conduct of the scientist. Moreover, the norms of science are often seen as morally superior by scientists.

> The technical goals toward this end [the extension of certified knowledge] provide the relevant definition of knowledge: empirically confirmed and logically statements of regularities, (which are, in effect, predictions). The institutional imperatives (mores) derive from the goal and the methods. The entire of technical and moral norms implements the final objective. The technical norm of empirical evidence, adequate and reliable, is a prerequisite for systematic and valid prediction. The mores of science produce a methodological rationale, but they are also binding, not because they are particularly efficient, but because they are believed right and good. They are moral as well as technical prescriptions.[136]

As is the case with other institutions, the institution of science has developed a complex of reward systems for living up to the norms and a corresponding system of punishments for those who violate those norms.

By all measures, ufology violates scientific norms. Sturrock, a certified and credentialed physicist who advocates the scientific study of UFOs, is considered a crank by his former colleagues, a man who is "past his prime."[137]

In the workings and functioning of the scientist in society, in many cases, the very existence of the system of rewards and punishment is enough to shape the research behavior of scientists.

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[134]Merton, The Normative of Science in *the Sociology of Science*, 1973, Chicago: Chicago University Press, p. 270.
[135] *Ibid*., p 268-269.
[136] Merton, *On Social Structure and Science*, University of Chicago Press, 1996, pp. 268. For a complete discussion of the ethos of science see pp. 268-276.
[137] Caller who identified himself as a physicist and former colleague of Dr. Sturrock's on the Diane Rehm radio show, August, 1996.

Many scientists will not even venture onto the controversial ground of ufology. Bob Park, physicist and Executive Director of the American Physical Society, calls ufology "pseudo science," and "fringe science," [138] and attends meeting of the Society for Scientific Exploration, which Peter Sturrock leads, only to gather material for his books on pseudo-science.

The value of the work of scientists is judged by their peers, operating largely thorough invisible colleges,[139] or geographically distributed networks of peers working in the same discipline, in universities and laboratories. The currency of science is publications, awards, promotion, and recognition; the more a scientist's work is cited with approval by his or her peers in the literature, the more he or she is respected and valued by his or her peers. When a scientist behaves outside of the consensual norms of science and ventures into studies of anomalies such as those of ufology, he or she loses peer esteem, and eventually stature and place in society. If enough peer esteem is lost, the scientist loses traction in the field and his or her career falters. In the worst case, the scientist is shunned by his or her peers. By all measures, engaging in ufology is an extremely dangerous activity for a scientist.

In the story of events leading to the creation of the Condon Committee, a good example of the possible different sets of priorities among the nested social contexts is Hynek's demonstrated sensitivity to the fact that he was operating in an alien culture,[140] one situated far from the approval of his scientific peers.

The Air Force community, too, had priorities far different from Hynek's. The Air Force just wanted to get rid of the UFO controversy, and return to business as usual. Minimal investigation and frequent attributions of unreliably to the witness-observers were commonplace. Hynek, an astronomer by training, accepted the Air Force's lack of rigorous methodology for investigation and in his approach to the problem, and deferred to the Air Force's desire to minimize the importance of the sightings.

Hynek chose to operate within the confines of the Air Force's institutional culture, a culture whose values differed from the astronomer's. Saunders, a psychologist by training, frequently violated Air Force cultural norms, did not defer to authority as required and generally fought the system. Saunders had violated the norms of the community in which he was resident and was fired for violating its norms (loyalty).

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[138] Personal conversation, Albuquerque, New Mexico, 1999.
[139] For a complete discussion of invisible colleges, see Diana Crane's work, *Invisible Colleges*.
[140] This would be the Air Force culture. Hynek was a scientist by training.

Rational actors in society bring with them a nested series of social, political and intellectual frames of reference. For humans, there is no such thing as a *tabula rasa,* or a blank slate. Every individual is the product of his or her social and intellectual context and history. Every sentient being has a history, a context and a frame of reference. It is hard to imagine a world where there is no *a priori* knowledge (Bauer 1994). In science, there are no knowledge contexts that don't rely on *a priori* knowledge.

As noted earlier in this work, a close examination of Condon's papers proves just how anti-UFO members of his scientific community were. There is ample evidence in both the history of Air Force UFO studies and the Condon Report of how much the scientific community and the military establishment "stacked the deck" in favor of no further UFO studies, as they selectively evaluated and filtered information according to the norms of the scientific community with regard to perception of taboo.

The Character of Research in Anomalies

Controversial topics on the edges of science provide fertile ground for the study of the effects of incursions into the territory of the norms of science and the results occasioned by these incursions. Inherent in controversies is the lack of agreement concerning what constitutes evidence and what evidence is relevant.

In the case of UFOs, the evidence is circumstantial and originates in personal testimony and eyewitness accounts, which are not considered sufficient proof, or even credible evidence in the scientific community. There is no conclusive direct evidence that would settle the matter, one way or the other. The eyewitness functions as the instrument of discovery. In ufology, the principal investigators are amateurs; thus the evidence is ambiguous and colored by the perspective and frame of reference of the individual investigator. Thus a great deal of time and effort is understandably spent calibrating the instrumentation—which means determining the credibly of the UFO witnesses themselves (as instruments of measurement) and the integrity of the data they produce. While this is understandable, it is not useful in the analysis of the UFO phenomenon. In addition, the use of human instrumentation is not precise enough or reliable enough for science.

Because of the nature of the problem and the question of the status of the evidence, UFO investigators fail to publish their findings in standard scientific peer reviewed journals. From all

perspectives, the study of UFOs does not meet the standards of science. That which does not meet the standards of science, yet engages in science controversies claiming discoveries, impedes science in the eyes of the scientific community.

Unlike science, in the UFO research arena, there is no guild for investigators; since there are no socially stabilized norms, there are no identified rewards and punishments readily available to the amateur investigator. In a field where notoriety helps, for the less than scrupulous amateur, there is no reason not to attempt hoaxes.

Most UFO investigators do not have credentials in astronomy or astrophysics and are considered to be charlatans by the pedigreed scientific community. In fact, the entire field of ufology is tainted by the lack of credentials of the UFO hunters.

Institutions, Individuals and Context

According to sociologist Michael Thompson, the creative interaction between an individual and his social context confers qualities on institutions, which in and of themselves lack intrinsic value.[141] The institution acquires meaning as a reflection of values held by those who belong to it,[142] and by itself does not independently confer value to its members. In fact, the contrary is more likely: the institution provides value to its members only in so far as its members empower it, and vest it with credibility.[143] In other words, members of an institution implicitly agree to live by its rules, and value its norms. An obvious conclusion is that institutions tend to reflect the values of those who create and maintain them.[144] While this may be, to some, a typically mundane and obvious sociological conclusion, it, nonetheless, helps us to understand how sometimes the *institution* [145]of the Air Force got in the way of the study of UFOs by making it clear that it was not career-enhancing for Air Force personnel to take the subject seriously.

Thus, it may prove useful to try to characterize how the Air Force, as the location of the bulk of the studies of UFOs from 1947–1968, may have influenced the outcome and character of the conclusions.

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[141] See Thompson, "The Problem of the Center," in *Essays in the Sociology of Perception*, p. 323.
[142] And thus defines an aspect of community.
[143] Thompson points out that people tend to grant credibility to institutions that reflect their worldviews.
[144] Mary Douglas, in *How Institutions Think*, underscores the fact that institutions, although they may shape our behaviors, do not think independently, nor do they have purposes. We construct our institutions to reflect our worldviews, thus legitimating them, and empowering them to operate with authority. It is important to remember that, a l'origine, institutions are a product of culture, not its creator.
[145] Consider the institution as a set of rules, regulations and cultural opinions, practices and norms, and directive patterns regulating human behavior. For additional insight, see Rayner (1999).

It seems fairly obvious that the Air Force, as an institution is intensely hierarchical with respect to both status and function. Status is largely acquired by position and title, in contrast to the acquisition of status in the scientific community. In the scientific community status appears to be acquired through performance and accomplishment (publications, funding, awards and prizes) rather than simple position. In both cases, shared experience, common world views, shared themes and messages and *modus operandi* function as social structures which unify the cultural frame and perception of the process previously identified as social intelligence.

In the Air Force culture, personal behavior is highly regulated by hierarchically assigned classifications; the "haves" can dramatically curtail the options of the "have nots." Stature and position are based upon seniority[146] rather than merit and performance and one's ability to integrate well into the hierarchy. Boat-rockers are disruptive to the workings of the institution, and are treated accordingly.

Thus, one can see why members of the Air Force might place more emphasis on the triage or suppression of unorthodox information such as UFO sightings, and why becoming interested in ufology would violate Air Force institutional norms, placing the individual member at significant career risk. The institutional structure of the Air Force, as an organization, encourages the anti-UFO values of its members. If the commanding officer, for example, doesn't think UFOs are serious business, the staff beneath him would be less successful by contradicting him, even with compelling evidence.

In the case of science as an institution, although everyone knows his or her place, it might vary over time. Since status and position in the organization are based upon merit and performance, ideas and publication, and thus their acceptance, status can change over a period of time based upon the performance of the individual scientist and the respect and approval accorded him or her by peers. In science, leadership is often charismatic, and the scientific community aggressively maintains the boundaries between science and non-science. Community and communal values are essential, for they define the organization and assign position and status to its members. The scientific culture might allow one of its members to pursue ufology, but only under accepted scientific terms and conditions, with investigation methods well within the accepted boundaries of science.

[146] X numbers of years in rank determines x level of seniority.

In the case of UFO hunters, it is safe to say that are considered outlaws by both groups. It is every man for himself or *sauve qui peut.* Community is irrelevant, although the common ground of shared experience results in an artificial group mentality, particularly when assaulted from the outside by a perceived tyranny of science and the demand for rigorous scientific proof of aliens and UFOs. Condon was not a UFO hunter.

In some social organizations, particularly those that are rigidly hierarchical, the social unit to which members belong constrains their behaviors[147] in thought and deed, word and action.

People devote a great deal of their available time to interacting with other people in their unit. The more intense and longer this interaction, the more group oriented individuals will be, and consensus is an important dimension to successful participation in the institutional culture. If admission to the organization is hard to obtain, and the organization is profoundly conscious of its boundaries, the group is an influential unit of institutional action. In loosely formed organizations, such as those of UFO enthusiasts, no group demands are made on the individual. When people are neither reliant on nor constrained by a group of their peers, and when people act primarily as individuals self-deterministically, consensus is less important to success in the organization. Thus, it is more likely in loosely formed organizations that behavior considered deviant will be tolerated, for it does not compromise the success of the organization or group within the organization.

This analysis, although by no means exhaustive, provides insight into the profound institutional differences of these three communities in action: the scientific community, the Air Force and the UFO hunter. Thus, using a lens of sociology, we discover additional aspects of the ways in which seeing and perceiving UFOs, sightings and reports, are culturally contingent, and partially shaped by the social behaviors and structures adopted by members of different institutions.

[147] By constrained, I mean two things: first, the extent to which deviant behavior is proscribed by the group; and second, the extent to which the unit "group" acts as a filtering mechanism for truth.

Conclusion

Science, Perception and the Condon Report

I have shown that in the case of the Condon Committee and its report, *The Scientific Study of Unidentified Flying Objects*, the way Condon framed the research problem was culturally and historically contingent on the social, scientific, and political frames of meaning ufology acquired from 1947-1969. I have also demonstrated that he shaped the report as a physicist would to satisfy the requirements of the Air Force, whose goals in ufology were congruent with Condon's—i.e. remove UFOs and ufology from the public eye, by ensuring that the topic could not be construed to have scientific credibility.

A study of the history of the government responses to UFO sightings shows that the reaction of the UFO investigator, at all levels, was historically contingent on all the studies and representations that had gone before. As an institution, the Air Force shaped the attitudes of its members, and influenced the collection and processing of data.

The character of the social and historical contingency of ufology is particularly clear when it comes to how Condon, the physicist scientist, viewed UFOs in general, and how his conditioning as a scientist, when placed in opposition to the seemingly wild notions and conclusions of the public UFO enthusiast community, selected a research question that contained its own conclusion: that UFOs were not extraterrestrial in origin.

It is here that the ethos of science and the sociology of taboo play a fundamental role in shaping the terms of engagement. In this thesis, I have tried to paint a picture of the ethos of science at work in the UFO controversy, to demonstrate how Condon was its defender, and to show how taboo—or the breaking of scientific norms—played a fundamental role in shaping behavior of scientists and serious UFO investigators, whose social, professional, and political statures were threatened by the putative outlandishness of extreme claims of extraterrestrial invasions and ufology in general.

To do this, I have examined four types of source material revealing the political interactions of three communities: (1) the official records and studies of the institutional community, the Air Force; (2) personal correspondence and writings and interactions of the principals; (3) books, articles, and correspondence of the participant public, the advocate public, and the skeptic public; and (4) reports in the media pertaining to UFOs during the period 1947–1969.

The Value of STS

Using the tools of sociology and cultural theory, I have demonstrated how, historically, UFO reports were shaped by social perception of their reality, and that reactions to them in two communities of authority—the Air Force and the scientific community—was a product of social intelligence, and not of the use of scientific method as perceived by the public. For reasons apparent in this study, it was and continues to be culturally dangerous for a scientist to participate actively in investigating the UFO phenomenon. I have examined the structures and characters of two institutions—science and the Air Force—in an effort to demonstrate how the institution itself plays a role in shaping public discourse through discrete, small, daily actions and reactions. I have shown that the character of an individual's behaviors and responses to cultural phenomena is also a function of his or her location in the cultural space of institutions. In highly structured institutions, such as the Air Force, authority is derived from hierarchical location. This is not the case in science, where authority springs from the culture of science itself.

The classic methods of science—or the "rational model"—do not seem to operate effectively when it comes to anomalies. The tenets of the rational model can be summed up thus:

- Every scientist has the right to publish and should
- Works are read by the scientific community before a judgement is passed
- Theories that are offered are tested
- Honesty and fairness prevail in hearing and evaluating new ideas
- New work is appraised by specialists expert in the field in question
- New ideas are openly discussed
- Radical innovation is not an obstacle to new ideas
- Imprecision is a defect in science—quantification is the ideal
- Appeals to authority outside of science are rejected
- Procedure is adhered to
- When at first new ideas are rejected, they may return with new proof and will be cordially and respectfully re-evaluated. (Adapted from McCarthy, 1973, pp., 9-11)[148]

[148] McCarthy credits Alfred DeGrazia's book the *Velikovsky Affai*r for this notion of the rational model of science. Although less elegant, it is reminiscent of Merton's description of the ethos of science, and Kuhn's characterization of the scientific community in the *Structure of Scientific Revolutions.*

I have concluded that the UFO problem did not receive scientific due process according to the "rational model of science" during the period 1947–1969, and that cultural models are useful tools for exploring how and why reports of UFOs received the treatment they did at the hands of the Air Force, the scientific community, and the public. I have demonstrated how knowledge requires cultural certification, and that if such knowledge is to be accepted as genuine knowledge in any culture other than the one in which it was created, the criteria upon which it relies for certification must be coherent with the world view of the culture to which it is offered (Ravetz 1971, pp. 207-240). For example, for ufology to be taken seriously by the mainstream scientist, it must be understood as a scientific problem by them. It must be coherence with their world views. In the absence of such coherence, the material in question can not pass as knowledge in the scientific community. Eyewitness reports of UFO sightings, for example, will never count as sufficient evidence to the scientific community.

I have tried to illustrate how and why I believe that anomalies such as UFOs provide the STS scholar with a rich site for exploration of the myriad workings and conflicts of science in society, the cultural matrix in which science is embedded, and the resulting discourse and dialogue concerning knowledge in the public sphere.

Topics for Further Study

Using conclusions from this case study on how scientists behave when confronted with anomalous phenomena, one could explore alternative models that might prove fruitful to the study of controversial research topics. One might pursue, in greater depth, topics such as: the social construction of ufology; ufology and cultural theory; or one could turn to an in-depth analysis of the character of institutions as constitutive of knowledge communities, particularly in the exploration of anomalous phenomena. One might conduct a textual analysis of Air Force reports of UFOs under Project Blue Book and compare them with sighting reports of public citizens. It would also be very interesting to locate the papers of members of the Clemence Committee to explore how and why its members certified the Condon Report.

From a cultural studies perspective, one might also examine what counts as evidence in the UFO enthusiast-hunter communities, to determine if it fits in with an as yet undiscovered epistemic system which does not rely on science for its certification.

Ufology, in all its myriad aspects, presents the STS scholar with a rich site for the continued study of what happens when science, society, and anomalies collide.

Appendix A

Anatomy of A Wave

It is useful to study waves of UFOs to gain an understanding of how they map onto the creation of government-sponsored studies. The greater and more dramatic the UFO wave, the greater the potential for the creation of a government study.

As mentioned in the body of this study, wave has a very specific meaning in ufology (Clark 1998). By studying the kind and dimensions of UFO waves, one can map the linkages, and causes and effects, if any, between the numbers of sightings and the numbers of reports generated. This distinction is aimed at eliminating the confusion between the numbers of sightings and the effect of media and press coverage, if possible, on those numbers. This touches on the question of whether or not waves mean heightened UFO activity or simply heightened public awareness and sensitivity to UFO reports, without an actual increase in the numbers of UFOs.

A UFO wave is not based on the number of sightings alone. Rather, according to Clark (1998) there must be "a certain homogeneity of the quality of the reports demonstrating a place, time or appearance and behavior." For example, one sort of sighting may appear frequently, such as green fireballs, or Foo fighters or Ghost rockets. Waves can be local or regional in nature.

Ufologists (Clark 1998, Jacobs 1975) have identified categories of waves: short term, narrow distribution;[149] long term-narrow distribution;[150] short term, broad distribution;[151] and long term, broad distribution[152]. These are examples of major wave categories, but by no means the only ones.[153] Of particular importance to this study is the categorization of the great wave of 1964-

[149] The wave of sightings at Exeter, New Hampshire in September and October of 1965 falls into this category.
[150] This activity, although long-term, stays in a relatively fixed geographic area. John Keel has described the ghost lights of Point Pleasant, West Virginia as ones fitting in this category. In many cases, the area is so well known for these activities that people go "UFO hunting" on a regular basis. Area 51 in New Mexico has this reputation. It is believed that if one just goes out and waits at night, one will be rewarded by seeing a UFO. A wave of reports came from the Gulf Breeze area of Florida during 1987 and 1988.
[151] The ghost rockets of Scandinavia fall into this category. National waves unfold in national boundaries; a third distinction recognizes regional waves, such as the sightings of the green fireballs in the American southwest in 1948 and early 1949.
.[152] In this category, UFO activity is more intense that in other waves. Clark calls the classic wave an epidemic, reserving the label of pandemic for the great waves that are long term and have broad distribution. The waves of 1908–1916 and 1964–1968 fall into the category of great pandemics. Lesser pandemics are the periods of the 1930s, 1973–1974 and 1978–1982.
[153] One could easily make the claim that there are as many categories of waves as there are contributors to the UFO literature and analysis.

1968 as a *pandemic,* for the events of this period will prove key to understanding the genesis and effect of the Condon Report.

Each UFO wave has a unique structure which is a function of the matrix—social, geographic and temporal—in which the wave occurs (Clark, 1998). The events of the most familiar and most researched waves, or those of broad distribution and short duration, follow two distinct courses: *explosive* and *gradual*. The *explosive* wave shows UFO activity that suddenly breaks out, quickly peaks and soon subsides. A graph of these reports shows steep and precipitous contours.[154] The *gradual* wave more resembles the profile of a bell curve, showing a gradual build-up in activity, with a crest of activity over a period of weeks or months, and then a gradual decline.[155] Clark (1998, pp. 1004–1024) further characterizes the two categories of waves as follows:

Explosive[156] waves are characterized by:

- A triggering event of inherently spectacular nature and high publicity;
- An outpouring of reports favored with extensive and generally positive media coverage during the next few days;
- Followed by the spread of sightings over a widening area;
- An increase in hoaxes and unfavorable media attention, and;
- A rapid diminution of reports starting a few days after the peak.

The time period for an *explosive* wave takes place in about three weeks of intense activity, with the peak period usually lasting less than a week. The wave of 1896 is an example of an *explosive* wave.

A *gradual* wave is characterized by:

- Weeks or months of unpublicized but increasing activity;
- The spread of sightings over a wide area;
- Initial publicity without any immediate upsurge in reports;
- A period of intensive sighting activity accompanied by extensive and positive media coverage;
- The spread of sightings into new areas while old hot spots cool down;

[154] According to Clark, who describes this model in his encyclopedia, the waves of 1896, 1947, 1950, 1957 and 1973 fit this model.
[155] Clark puts the waves of 1897, 1909 (New England), 1913 (Britain), 1946, 1952, 1954, and 1965 follow this course.
[156] Although this model is taken from Clark (1998), it is a rather commonsensical way and provides us with an excellent framework of analysis. Ted Bloecher, Otto Billig and Loren Gross and David Jacobs have also studied UFO waves.

- A rise in hoaxes and unfavorable media attention, and;
- A slow decline in reports to pre-wave levels.

The time scale for the *gradual* wave is prolonged over several months. In the case of the wave of 1897, it extended over four months. In general, in a *gradual* wave, peak level activity is anywhere from two-three weeks. When the actual waves of UFO sightings are characterized and mapped against stages of a UFO wave, many of the waves show patterns characteristic of their alleged type.

Waves do not occur in rhythmic or predictable cycles, and their course may vary as a function of social causation occasioned. One specific hypothesis relates the occurrence of waves to periods of economic stress;[157] another to times of national unrest and shame;[158] (Sputnik, Vietnam, or Watergate) a third, more loosely organized hypothesis related the waves to periods filled with social and political crises[159] or diffuse anxiety and frustration. [160]

[157] Vieroudy, 1976, Boueyre and Vieroudy, 1977.
[158] Kottmeyer, 1991.
[159] Peebles.
[160] Billig.

APPENDIX B

Character of the UFO Literature

As of this writing, there are literally thousands of books written about various aspects of the UFO problem; some of the more obvious categories of UFO works include those which explore its history, sociology, phenomenology, anatomy, and eyewitness accounts, written by believers and debunked by skeptics. In the category of history there are official documents such as project reports and books recounting in great detail the chronology and character of every sighting on record. Although the range of literature on the subject is broad, writings on UFOs can be classified by type according to the disposition and intellectual and cultural frame of the author.

An Operational Typology

UFO Historical Studies

In this category fall the general works that chronicle the history of sightings and society's overall response to them. Noteworthy works include:

David Jacobs, *The UFO Controversy in America*
Jerome Clark, *The UFO Encyclopedia*
Curtis Peebles, *Watch the Skies*
Steven J. Dick, *The Biological Universe*
Peter Sturrock, *The UFO Enigma, "Analysis of the Condon Report"*
Jenny Randles, *The UFO Conspiracy, The UFO Reality, UFOs and How to See Them*
Michael W. Swords, *"The University of Colorado Project,"*

Official Reports

Project Sign (February 1949)
Project Twinkle (27 November, 1951)
Project Grudge (1949)
Project Blue Book (1949-1969)
Air Technical Intelligence Center (ATIC) Special Report Number 14 (Battelle Statistical Survey) (1955)
Air Force Scientific Advisory Board Report (ad hoc O'Brien Committee Report) (1966)
The Robertson Panel Report (1953)
The Report on the Scientific Study of Unidentified Flying Objects (Condon Report)
The Catoe Bibliography (1968)
The National Academy of Sciences Panel Report "Review of the University of Colorado Report on Unidentified Flying Objects" (1968)

House Committee on Armed Services, Hearing Report on UFOs (1966)
House Committee on Science and Astronautics, Report of UFO Symposium(1968)

Personal Narratives

Eyewitness Accounts of Sightings, Kenneth Arnold, *The Coming of the Saucers*
Eyewitness Accounts of Alien Contact and Abduction
George Adamski, *Inside the Spade Ships, Roundtrip to Hell in a Flying Saucer*
John G. Fuller, *Interrupted Journey*

Detailed Accounts of UFO Studies by Study Participants

Captain Edward J. Ruppelt, *The Report on Unidentified flying Objects*,
David Saunders, *UFOs, YES!*
J Allen. Hynek, *The Hynek Report*,

Works of Explanation

Folkloric Origins

Charles Fort, Jacques Vallee, *Passport to Magonia*

Ancient Extraterrestrial Astronauts

Erich Von Daniken, *Chariots of the Gods*
Charles Fort, *Book of the Damned*
George Hunt Williamson, *In Other Tongues—Other Flesh, Secret Places of the Lion, Road in the Sky*
M.K. Jessup, The *UFO and the Bible*
Brinsley LePoer Trench, *The Sky People, Temple of the Stars, Secret of the Ages: UFOs From Inside the Earth*
W. Raymond Drake, *Gods or Spacemen*!
Barry H. Downing, *The Bible and Flying Saucers*
Raymond E; Fowler, *The Watchers*
Jacques Vallee, *Passport to Magonia*

Phenomenology

Jacques Vallee, *Anatomy of a Phenomenon, Challenge to Science, Forbidden Science, The Edge of Reality*
Aime Michel, *Flying Saucers and the Straight Line Mystery*.

Psycho-Sociological Analyses

David Hess, *Science in the New Age*
Jodi Dean, *Aliens in America*
Carl Jung, *the Myth of Flying Saucers*
Thomas E. Bullard, *UFO Abductions, The Air Ship File*
Jacques Vallee, *Confrontations, Messengers of Deception, Forbidden Science, Challenge to Science*

UFOs as Paranormal and New Age Phenomena

John A. Keel, *A Disneyland of the Gods, UFOs, Operation Trojan Horse, Our Haunted Planet, Strange Creatures from Time and Space*
Desmond Leslie, *Flying Saucers Have Landed*
Jacques Vallee, *Revelations: Alien Contact and Human Deception*
W. Gordon Allen, *Spacecraft From Beyond Three Dimensions*
William Alnor, *UFOs in the New Age*
Gray Barker, *They Knew Too Much About Flying Saucers*
Manfred Cassirer, *Parapsychology and the UFO*
L. Sprague DeCamp, *the Ragged Edge of Science*
Michael Gross, *The Final Choice, Playing the Survival Game*
F. W. Holiday, *The Dragon and the Disc, The Goblin Universe*
Gilbert Holloway, *The Coming of the Space People*

Detailed Explanations by Debunkers and Skeptics

Donald Menzel, *Flying Saucers, The World of Flying Saucers*
J. Allen Hynek, *The Hynek UFO Report, The UFO Experience: A Scientific Inquiry, Socorro (NM) Landing*
Philip Klass, *UFO Abductions, A Dangerous Game, UFOs—Identified, UFOs—the Public Deceived.*

Detailed Explanations by Believers

Frank Edwards, *Flying Saucers, Serious Business*
Donald Keyhoe, *Aliens From Space, The Flying Saucer Conspiracy, Flying Saucers—Top Secret*

Accounts by UFO Enthusiast Groups and Their Members (APRO, NICAP, MUFON)

John G. Fuller, *Incident at Exeter, Aliens in the Skies, The Interrupted Journey*
Donald Keyhoe, *The Flying Saucers Are Real, Flying Saucers from Outer Space, The Flying Saucer Conspiracy, Flying Saucers, Top Secret*
Coral Lorenzen, *The Great Flying Saucer Hoax, UFOs Over America*
Kevin Randles, *Project Blue Book Exposed*
Ted Bloecher, *Report on the UFO Wave of 1947*

Richard Hall, *The UFO Evidence*

Sex and UFOs

Gray Baker,*They Knew Too Much About Flying Saucers*
Marl Baxter, *My Saturnian Lover*
Albert Bender, *Flying Saucers and the Three Men*
Otto Binder, *Flying Saucers Are Watching Us*
Jim Schnabel, *Dark White: Aliens, Abductions, and the UFO Obsession*
John Stuart, *Concerning Strange Experiences*
Karla Turner, *Taken—Inside the Alien-Human Abduction Agenda*
Jacques Vallee, *Dimensions*: *A Casebook of Alien Contact*

Abduction Phenomena

David Jacobs, *Secret Life*
Budd Hopkins, *Intruders, Missing Time, Witnessed*
John E. Mack, *Abduction*
CDB Bryan, *Close Encounters of the Fourth Kind*
Raymond Fowler, *The Allagash Abductions, The Andreasson Affair, The Watchers*
Jenny Randles, *Abduction*
Jacques Vallee, *The Invisible College*
Whitley Streiber, *Communion*

The literature of ufology is broad, eclectic and spans a wide variety of worldviews, epistemological systems, and institutions. In this study, I will focus on the primary literature of the official reports and the analytic and explanatory accounts of the phenomenon. I have dealt with the sociology of abduction in another paper, “The Saucer People,” which is available for the asking.

Appendix C

The Cast of Characters Involved in the Making of the Condon Report*

Edward U. Condon	Chief Scientist	50%**
Robert J. Low	Project Coordinator	100%
Stuart W. Cook	Principal Investigator	0%
Franklin E. Roach	Principal Investigator	100%
David R. Saunders	Co-Principal Investigator	100%
Martin D. Altschuler	Solar Physicist	0%
Frederick B. Ayer	Nuclear Physicist	100%
William S. Blumen	Meteorologist	10%
Roy Craig	Physical Chemist	100%
William K. Hartmann	Astronomer	40%
Aldora Lee	Psychologist	100%
Norman E. Levine	Electrical Engineer	100%
Joseph H. Rush	Physicist	10%
William A. Scott	Social Psychologist	20%
Michael M. Wertheimer	Experimental Psychologist	20%
John B. Ahrens	Research Assistant	100%
Mary Louise Armstrong	Administrative Assistant	100%
Dan Culberson	Research Assistant	100%
Betty Dodd	Editorial Assistant	100%
Pauline Hazlett	Research Assistant	50%
Harriet Hunter	Editorial Assistant	100%
James E. Wadsworth	Research Assistant	100%
E. James Archer	Dean of the Graduate School University of Colorado	
John G. Guller	Journalist	
R. Roger Harkins	Reporter, *Boulder Daily Camera*	
J. Allen Hynek	Chairman, Department of Astronomy Northwestern University	
Donald E. Keyhoe	Director, National Investigations Committee for Aerial Phenomena, Washington (NICAP)	
Coral and Jim Lorenzen	Co-Directors, Aerial Phenomena Research Organization, Tucson (APRO)	
Thurston E. Manning	Dean of Faculties and Vice-President for Academic Affairs University of Colorado	
James E. McDonald	Senior Physicist, Institute for Atmospheric Physics University of Arizona	

* Note pp 21-22 from: *UFO? Yes! Where the Condon Committee Went Wrong* by David R. Saunders and Roger Hawkins

**These percentages are the maximum time-commitments to the Project by each person

Afterward

In 1997, in Tarrytown New York, Dr. Peter Sturrock held a workshop on UFOs. Now known in ufology as the Pocantico Workshop,[161] funded by Laurance S. Rockefeller, the workshop began on September 30, and ended on November 3, 1997. A panel of nine scientists, lead by Dr. Sturrock, concluded the following:

- The UFO problem is not a simple one and it is unlikely that there is a simple answer
- Whenever there are unexplained observations, there is the possibility that scientists will learn something new by studying those observations;
- Studies should concentrate on cases which include as much independent physical evidence as possible and strong witness testimony;
- Some form of regular contact between the UFO community and the physical science community could be productive
- It is desirable that there be institutional support for research in this area
- The GEPAN/SERPA project of CNES provided a valuable model
- There may be a possible health risk associated with UFO events.

Acknowledging that UFO research is not a laboratory science, Sturrock also recommended that there should be the following distinct activities in UFO research:

- Field investigations leading to case documentation and the measurement or retrieval of physical evidence;
- Laboratory analysis of physical evidence
- The systematic compilation of evidence into catalogues
- The analysis of compilations of data (descriptive and physical) to look for patterns and so extract significant facts
- The development of theories and the evaluation of these theories on the basis of the facts.

[161] Named after the name of the conference center.

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PERSONAL

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EDUCATION

Virginia Polytechnic Institute and State University, currently enrolled in an M.S./Ph.D. program in Science and Technology Studies

University of Maine, MA Coursework, French Literature, 1974

University of Maryland, BA French/Political Science, 1972

L'Institut Pour les Etudiants Etrangers, Aix-en-Provence, France, Diplome de Langue et de Lettres Francaises, 1971

St Johns College, 1968-1970

PROFESSIONAL EXPERIENCE

Director, Policy Development—National Aeronautics and Space Administration, Office of Policy and Plans, 8/97 to present, GS-15

Director, Policy and External Affairs—National Aeronautics and Space Administration, Office of Life and Microgravity Sciences and Applications, 5/93 to 8/97, GS-15

Deputy Director, Policy and External Affairs—National Aeronautics and Space Administration, Office of Exploration, 2/92 to 5/93, GS-15

Deputy Director, Office of Policy Analysis—Department of the Interior, 1/91 to 2/92, GS-15

Political Consultant, Campaign Manager, and Freelance Writer, Tidewater, Virginia, 8/86 to 1/91

Congressional Staff (Press Secretary, Speechwriter, Legislative Assistant to Congressman Daniel K. Akaka; Executive Director, Congressional Space Caucus; Committee Staff, House Science and Technology Committee)—U.S. House of Representatives, 1980 to 1986

Press Assistant—Mayor of Honolulu, 1977 to 1980.

Radio Reporter and Broadcaster--KHVH Radio, Honolulu, Hawaii, 1976-1977

Danforth Teaching Fellow, Phillips Andover Academy, 1975-1976

Founder and President—L'Institut d'Etudes Francaises, Nantucket, 1974 to 1975.

PUBLICATIONS

All major publications published under employer's name (Mayor Fasi, Congressman Akaka, Secretary of Interior Lujan, and various NASA Associate Administrators) Publications range from newspaper and magazine articles, speeches, brochures and pamphlets to the Annual Stewardship Report of the Secretary of the Interior

"The Dance of Legislation: The Commercialization of Expendable Launch Vehicles," in Low Cost Approaches to Space Exploitation, Conference Proceedings (California Space Institute, 1984)

PAPERS AND PRESENTATIONS

"Policy and Ethical Issues in Planetary Protection," presented at the Environmental Protection Agency, March, 1999.

"NASA at Forty: Why Commemorative Celebrations Can Never Tell the Truth," presented at the May, 1998 Society for History in the Federal Government's Annual Conference

WORKS IN PROGRESS

Monographs/Books

Saucer Wars: Knowledge Claims and the Use of Evidence in Selected UFO Communities (MS Thesis)

Myth, Identity and the Astronaut Hero (NASA)
History of the U.S.-Russian Bion Program (NASA)

Articles

"Space, Technology and Exploration: Welcome to Cyborgia."

"Space Commercialization: Door to the Future."

"From Missing Time to the End of Time: Aliens, Abductions and the Clock."

"Policy Issues in Space Commercialization."

RESEARCH INTERESTS

History, Sociology and Philosophy of Science
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PROFESSIONAL AFFILIATIONS

Society for History in the Federal Government
American Anthropological Association
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Society for the History of Technology
Society for Social Studies of Science
European Association for the Studies of Science

ACCOMPLISHMENTS, HONORS AND AWARDS

Created 160-Member Congressional Space Caucus

Drafted and engineered passage of Space Commerce Act, landmark legislation setting policy for commercialization of expendable launch vehicles; bill is now law.

Founder and first President, Women in Aerospace

Founder and Chairman, Congressional Staff Space Group

Founder and President, L'Institut D'Etudes Francaises

Founder and President, Virtual Images Ink

Managed successful political campaigns at state and local level

Danforth Teaching Fellow, Phillips Andover Academy

Numerous letters of commendation and performance awards throughout my federal career

PUBLIC SERVICE

Membership Chair, Courthouse Players

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PERSONAL INFORMATION

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