

COMMITTEE VI

The Universe and Its Origin:  
From Ancient Myth to Present Reality  
and Fantasy

THE BLACK BOX APPROACH TO UFO PERCEPTIONS

Discussion on Bruce Maccabee's paper,  
"UFOs: FANTASY OR PRESENT REALITY?"

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The "Null Hypothesis" for UFO reports, of which I am one of a handful of champions, states that no extraordinary stimuli are required to produce the entire array of public UFO perceptions in all their rich variety, wonderment, and terror. Known phenomena have produced all types of what is commonly known as "UFO reports", including apparitions of flying disks, radar and radio interference, terrifying chases and "intelligent maneuvers", telepathic messages, and so forth. There seem to be no types of reports which have not been, on record, produced at some point or another by prosaic circumstances.

We can consider the situation as a "black box" which consists of the human sensory/perceptual/mnemonic process. Into one end we insert any of a thousand various types of currency; we turn the crank and activate some undefined algorithm to process the raw stimulus; out the other end comes a "UFO report". We then collect and categorize these reports, and we attempt to define the INVERSE ALGORITHM to recreate the stimulus based on the report. Sometimes we are able to "cheat", to short circuit the black box by going back to records which the stimulus made on other witnesses (different algorithms!) or on other recording media (more hi-

fidelity black boxes, with much simpler transformation algorithms). But often the inverse attempt fails.

The argument of the UFO proponents, as represented by Dr. Maccabee, seems to be that since we cannot generate inverse transformational algorithms which convert SOME reports back into recognizably prosaic stimuli, then some truly extraordinary (possibly extraterrestrial and intelligent) stimuli MUST EXIST to account for our inability to perform the reverse transformation.

I believe this represents a basic fallacy of reasoning and of proof. Based on evidence as given, the conclusion of "extraordinariness of stimuli" is, in my analysis, NOT PROVEN by any standard of the scientific method.

Perhaps a key misconception of Maccabee's paper, and of pro-UFO argumentation in general, is an inaccurate estimate of the correlation of "simplicity and hi-fidelity of the algorithm" with education and expertise of the percipients. The argument is made that the whiter the collar, the truer the story. That is, percipients with higher education and more technological professions can be counted on to provide accounts which more accurately reflect the actual stimulus. A "trained observer" such as a pilot, being an expert on things

seen above the ground, would thus hypothetically be able to provide extremely reliable descriptions of anomalous apparitions. The same argument is made for policemen, for engineers, for astronomers, for other professional people.

But this view is vulnerable to numerous counter-examples (allowing in some cases the generalization that if there is indeed any correlation it is INVERSE, not DIRECT), and the view also can be put into question through common sense and everyday experience.

Who, after all, have been the favorite dupes of fake "psychics" such as Uri Geller? It's been the scientists, with their magnificently diploma-hung walls, who have time and again been suckered by the crudest sleight-of-hand tricks that wouldn't fool a child (and sometimes it's been children who have fooled the professors). The question here is not intelligence or honesty, it is the very "training" which makes the phrase "trained observer" ring hollow with mocking laughter. Scientists are trained to perceive the real world in a rather particular way, which may or may not accomodate sudden, brief, and unexpected apparitions. A stage magician knows well that he can misdirect and amaze adults (and the more intelligent and imaginative, the BETTER) while often being unable to delude children (since they

don't yet have the wealth of experiences ready to be deliberately and deceptively cued by the performer).

Such cuing and misdirection can also occur accidentally, and when it does, the more intelligent and imaginative percipient is usually at a disadvantage in accurately recounting the stimulus. The "black box" of such a percipient contains an immensely rich and tangled transformational algorithm, making the process of inverting the transformation much more difficult (if not impossible, as examples will show).

Aircraft pilots are an excellent example. Just what does their perceptual training consist of? Maccabee (et al.) would have us believe that decades of cockpit experience have developed in such people a dispassionate reflex to note the characteristics of any and all sudden visual apparitions. But this is unreasonable: surviving pilots are people of rapid action, not calm contemplation. Any unusual perception may instinctively be interpreted immediately in its most dangerous possible incarnation, and avoidance action must be executed quickly. Only later, when a sense of surprise (and by conditioned reflex, danger) has passed, can the pilot react closer to the human norm, with curiosity and careful

observation.

And what is the most dangerous thing a pilot can see out the window in mid-flight? It is another aircraft, on collision course. The training in observation which pilots therefore obtain over their flying careers is to instantly see if the visual apparition is consistent with some interpretation of an approaching physical aircraft, and if so, react to avoid collision. "Better safe than sorry" is a prudent motto in mid-air.

Hence it should come as no surprise that pilots have repeatedly misinterpreted distant fire-ball meteors as nearby jets or rockets, have thrown their aircraft into violent evasive maneuvers to dodge a falling satellite sixty miles overhead, have made turns to avoid running into the cloud-shrouded rising crescent moon, and similar cases. Such misperceptions -- which err on the side of caution and hence tend to enhance the survival rate of the percipients -- are regular features of UFO reports by pilots. This is so much so that even Dr. J. Allen Hynek of the Center for UFO Studies remarked in one of his books that "Surprisingly, pilots are among the poorest observers of UFOs" -- a valid generalization which Hynek did not draw appropriate conclusions from, and which he repudiated (or forgot) in later years.

The treatment of the Arnold case was neces-

sarily abbreviated. Maccabee had to leave out certain features, such as the motion and shape of the objects (which do not correspond to "classic" flying saucers), and the "repeater" nature of Arnold's experiences (he has been quoted as claiming multiple sightings of the same type of UFO he first saw). Since Arnold's account differed in so many details from the "run of the mill UFO", perhaps the perception appeared more characteristic of the internal percipient rather than the external stimuli. But immediately afterwards, Arnold quickly adopted the theme of "Flying Disks", a concept practically invented by publicist Ray Palmer. As a science fiction editor, Palmer knew that circular spaceships from outer space had been appearing on the lurid covers of the SF pulps since the mid-1930s if not earlier.

The "trained observer" fallacy appears frequently in Maccabee's paper, and leads him to attempt to enhance the credibility of certain percipients by inaccurately exaggerating their professional credentials. A good example is the "Rogue River Case", in which Maccabee asserts that two "engineers" were the percipients. The original report actually described the two men as "a mechanic" and "a draftsman", not as engineers. While a skeptic would maintain that the men's

professions actually had no demonstrable correlation with their credibility, it is Maccabee's thesis that the more professional the witness, the more reliable his testimony, and this encourages UFO proponents to exaggerate such professional status, as Maccabee has done here contrary to the original documentation of the case. Such an exaggeration is in my judgment irrelevant to the credibility of the two witnesses in questions, but it should perhaps bear some relevance to Maccabee's credibility.

To summarize the point in dispute, I quote Maccabee: "If there were no TRUFOS to be sighted (i.e., TRUFOS don't exist), then this [Battelle Study] result implies that the more reliable [sic!] a witness is, the more likely he is to make mistakes in his report of a sighting. On the other hand, if there were TRUFO sightings in the sample, then the result is completely consistent with our understanding of reliability." Precisely so -- as I have argued that Maccabee's basic understanding of the concept of witness reliability is faulty.

How does one test a "black box"? Analysis of the outputs may provide some statistical insight, but the most practical approach is experimental. One introduces controlled inputs and measures the resulting outputs. Doing so would give an analyst a good appreciation of the nature of the internal

transformational algorithm, which maps specific stimuli into a multidimensional array of perceptions, and thus also of the inverse algorithm by which an analyst can attempt to reconstruct the original stimuli based on the reported perceptions.

Staging "fake UFO cases" is one way, but has logistic as well as ethical problems. Better yet would be to find a class of well-defined stimuli and well documented perceptions, and then define the mapping function. This does not appear to be a line of inquiry followed by pro-UFO specialists, even though it is crucial to their argumentation since it provides otherwise unknowable insights into the issue of "reliability" via an explicit mapping of the behavior of the "black box" in question.

Soviet space and missile activity has provided us with a near-perfect "control experiment" in which startling visual apparitions were seen over a wide expanse of time and space, while the prosaic explanation was not published due to military secrecy.

In 1967, a series of orbit-to-earth thermo-nuclear warhead tests were conducted, with final reentry occurring at dusk across the Ukraine, Volga Valley, and Caucasus regions of the southern USSR. Hundreds of thousands of witnesses stepped forward,

including pilots (who saw a "pseudo-UFO" circle their aircraft causing its engines to stall), astronomers (who estimated the solid crescent-shaped "UFOs" to be a thousand feet from wingtip to wingtip), engineers, teachers, chemists, mechanics, and representatives of practically every other respected profession. They were seeing a series of classic "fireball" UFOs, with timing and motion coincident with the descending warheads but WITH PERCEPTIONS IDENTICAL TO THOSE ASSOCIATED WITH "CLASSIC" TRUE UFOs.

Since 1977, multitudes of witnesses in Argentina, Chile, Uruguay and southern Brazil have described "circular UFOs" which occasionally fly across the evening sky. Pilots have seen them and chased them; astronomers have dubbed them "classic flying disks"; dockworkers in Chile swore the object rose up dripping from the ocean to the west; motorists have careened down mountain roads in desperate flight; witnesses have sworn to radar contact and radio interference, and several even testified -- under hypnosis and polygraph -- to psychic messages and physical sexual contact with occupants of the pseudo-UFOs. All these particular cases can be traced directly and unequivocally to excess propellant dumps from Soviet military missile observation satellites launched an hour earlier from Plesetsk. The visual stimuli were

straightforward, but THE BLACK BOX ALGORITHMS WERE NOT and nobody in the UFO field was able to derive the inverse transform until I matched records of launchings with the times of the mass sightings.

Most recently, in January 1985, the Soviet newspaper TRUD described an encounter between an airliner and a UFO on an early morning flight from Rostov to Tallinn. The object reportedly paced the airliner, illuminated the ground beneath, was seen by another passing airliner, was observed on radar by ground controllers, and even at one point reflected the image of the airliner. Further research allowed me to correlate this sighting with the launching of an SS-X-25 ICBM from the Plesetsk missile center north of Moscow; the launch was observed from more than a dozen sites in neighboring Finland, about 4 AM September 7, 1984. The visual stimulus was the booster exhaust plume; everything else was provided gratis from the imaginations of the involved percipients. THESE WERE AIR CREWS AND TRAFFIC CONTROLLERS, AMONG THE MOST "RELIABLE" OBSERVERS ACCORDING TO MACCABEE.

The conclusion is that the "black box" contains transformational algorithms even more bizarre than Maccabee imagines, with all the consequent difficulty in constructing inverses. If prosaic (albeit rare and secret) visual stimuli can

thus produce any and all type of known "UFO phenomena", where is the NECESSITY to demand the existence of extraordinary stimuli?

Let us see how fruitful the black box approach can be in the analysis of the testability (the "disprovability") of the Null Hypothesis. If the residue of "true UFO reports" are a function not of extraordinary stimuli but of the investigators' lack of experience and trained insight and the non-availability of records of candidate prosaic stimuli, one would postulate that the earlier in the modern UFO era one looked, the greater the chance of finding so-called "true UFOs". In the first years of the mass phenomenon, investigators had little real understanding of the more arcane aspects of the "black box" transformation and thus they had scant prospect of developing inverses ("solutions") even if they existed; in those years, the number of highly classified flight projects was quite high (e.g., "Skyhook", or later the U-2) and records of even non-classified flight traffic were spotty and short-lived. Hence one could predict that any selection of "true UFOs" chosen on a basis of equal "quality" should be heavily biased towards earlier reports.

This is exactly what is seen in Maccabee's selection of 25 TRUF0s. An unexpectedly (and non-

random) large portion are from the first decade of "modern UFOria", and proper weighting for subsequent growth in the pool of potential percipients (general population, pilots and passengers, astronomers, campers, truckers, etc.) would doubtlessly increase the startling assymetry: there are several times too many "TRUFOS" in the earliest years of this period than one would expect if the phenomenon were independent of the growing experience and insight of investigators. One explanation might be that the "real" stimulus has markedly declined, and another is that the public has stopped bothering to report them. But from the point of view of the Null Hypothesis, the explanation of this distribution is that investigators have with the passage of time developed a much better knowledge of the "black box" and its functions, both direct and inverse, and thus are solving cases today which would have gone unsolved 20-30 years ago. Since investigating cases more than a few years old is a labor fit for Hercules, Hercule Poirot, or a miracle worker -- the passage of even a short span of time can render the simplest prosaic "UFO" into a "true UFO" if conditions are right. In general, it seems if not solved quickly a UFO case will probably never be solved (with some notable exceptions).

This skewed distribution has been noted by UFO skeptic Philip J. Klass among others, and is consistent with my observation of the "Mother Goose Syndrome" in ufology: the best stories tend to be "long ago and far away", since these are usually congenitally immune from effective skeptical investigation. As an example, just consider the recent ufological love affair with mainland Chinese UFO reports, despite what seems so obvious (to me) to be connections between major cases and some as yet undocumented Red Chinese missile testing program.

Some shaky analogies in Maccabee's paper cannot be overlooked, either. Treating the UFO phenomenon with the same outlook as the proverb, "Where there's smoke, there's fire", is a not very adept argumentation trick. We all realize that the reliable phrase should simply be, "Where there's smoke, there's smoke", since the fallacy of assertion of the consequent (as it is called by logicians) requires that the conclusion ("fire") be the only possible engendering cause of the conditional ("smoke"), when of course common sense and everyday experience tells us it's not (lucky for my kitchen and the motor of my car!).

Another analogy can be conjured up, and a syllogism constructed to test it. A leading pro-UFO argument is that since some UFO reports cannot be

solved, then their stimulus must be extraordinary. Isn't this akin to suggesting that since some missing children are never found, they might well be on Mars? It turns out there really is a "Judge Crater" on the Moon, for example. Since some airplanes and automobiles crash without explanation, are extraterrestrial traffic saboteurs at work? Since a good fraction of murders remain forever unsolved, are psychotic time-travelling killer-robots at work? Surely not, of course -- it's absurd even to suggest such ideas. But how far afield is the analogy to the evidential value of "unsolved" UFO cases?

The syllogism, to repeat, goes like this: Since some UFO reports cannot be solved by amateur investigators working in their spare time, then there must exist extraordinary stimuli behind some UFO reports. As a technique of analysis, invert the syllogism to create a new one of equivalent boolean value. It now reads: if all UFO reports were caused only by ordinary stimuli, than amateur investigators working in their spare time would be able to solve every one of them. Worded this way, the syllogism is arguably untrue (there are numerous counterexamples of cases which happened to be solved only by "accident"); its untruth implies untruth for the first equivalent assertion,

championed by UFO proponents.

What then do I as a skeptic conclude about prospects and policies for the UFO phenomenon?

The possibility nevertheless still exists that currently undefined phenomena of genuine interest to science (or, say, to the CIA) are occurring but are being perceived and reported as "UFOs" and hence are not coming to the attention of the proper specialists. For that reason, serious continuing efforts are justified both by Maccabee and his colleagues and by the skeptics. I encourage donations to the Fund for UFO Studies.

Just because a perception goes into the black box and comes out transformed into a "UFO report" is no grounds whatsoever for concluding that the original stimulus was uninteresting. As is well known in mathematics, a mapping function can be many-to-one (that is, different inputs can produce the same outputs) and experience suggests that our UFOric black box does behave that way, making any unambiguous reverse transformation mathematically impossible. So "extraordinary stimuli" are NOT DISPROVED by this line of reasoning, which can only claim that such stimuli are NOT PROVED.

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