

The failure of the 'science' of ufology

The winner of the £1000 *New Scientist*/Cutty Sark Whisky essay on unidentified flying objects criticises UFO believers for their unscientific approach. Just because scientists cannot explain every "sighting" does not mean that UFOs exist

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In the 30 years since the current flying saucer fever began, the phenomenon has apparently been transformed from the property of cranks and crackpots to the subject of true scientific study. The sensational term "flying saucer" became the more semantically neutral "unidentified flying object", or "UFO". The study of such reports—the objects themselves, not being physically present, cannot be studied—came to be called "ufology".

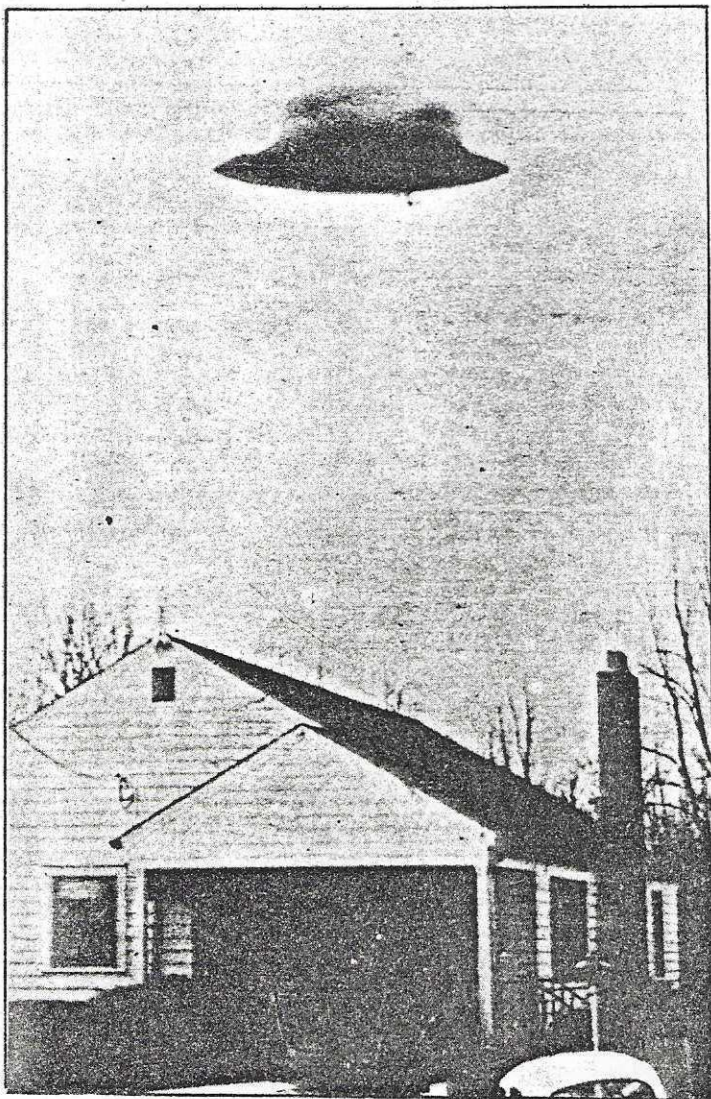
The word has all the appearances of a true science, yet somehow that particular branch of study has *not* become accepted as a science. Can ufology really be considered a true science, or perhaps an infant science, or possibly an unborn science—or is it instead just a hysterical pregnancy? After all the labour, what has been produced?

Ufology has been shunned by "traditional" science, a rejection which many participants in the movement see as a knee-jerk reaction to any new and unconventional idea. Ufologists regale themselves with anecdotes about Galileo, Giordano Bruno, Louis Pasteur and Charles Darwin, and

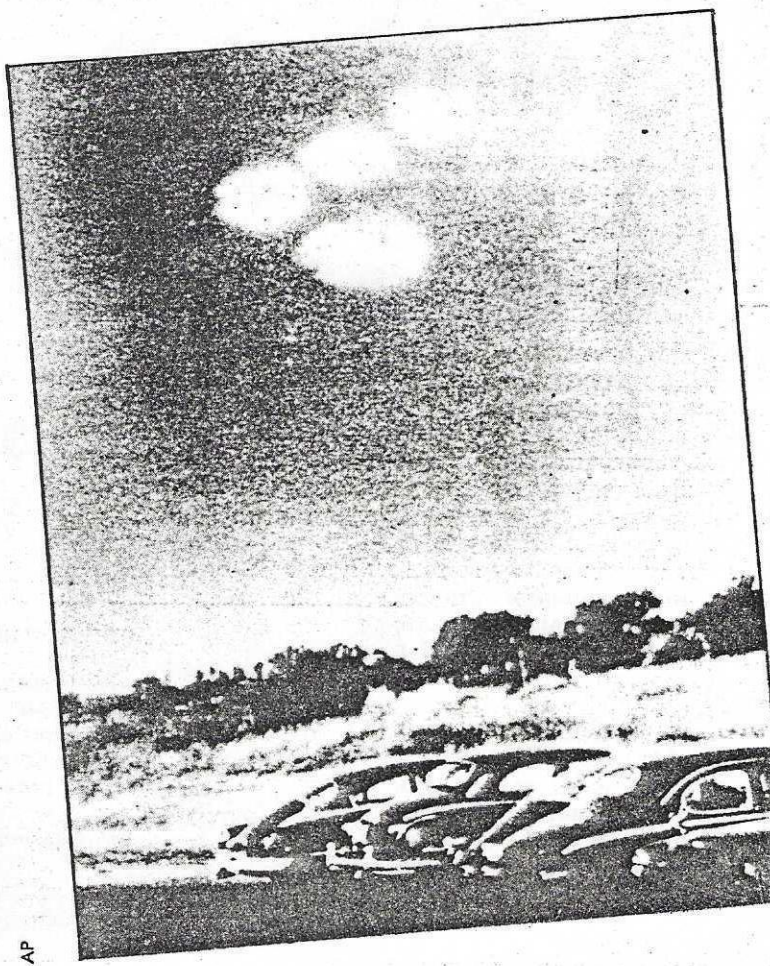
often appear to contend that contemporary rejection of ufology is practically a canonisation of their field as a future science. "How much of yesterday's heresy is today's science?" they ask knowingly.

The answer, unfortunately, is very, very little. Most scientific heresies of the past fell by the wayside, forgotten in our history books, and unnoticed by modern would-be Galileos. Ufology must have better credentials than simply its rejection by modern science. After all, in those 30 years since UFOs appeared, modern science has undergone several generations of radical revolutions in its comprehension of the Universe, from the cosmic and macroscopic to the microscopic and subatomic scales.

The suspicion with which modern "establishment science" regards the UFO movement appears to be more closely connected with some disturbing characteristics of "ufology" itself. Although many negative feelings have, no doubt, been aroused by the crackpot aura with which the flying saucer movement has long been associated—despite the best efforts of a few serious ufologists—other criticism has been levelled at the very philosophical foundations of ufology. The inability of ufological theorists to



Two classic UFOs—Ralph Ditter, a barber in Zanesville, Ohio, said he took the picture (left) on 13 November, 1967; Shell Alpert took the other picture (right) on 16 July, 1952 when he was with the US Coastguard



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come to grips with these objections represents the most serious roadblock to the acceptance of ufology as a legitimate branch of modern science.

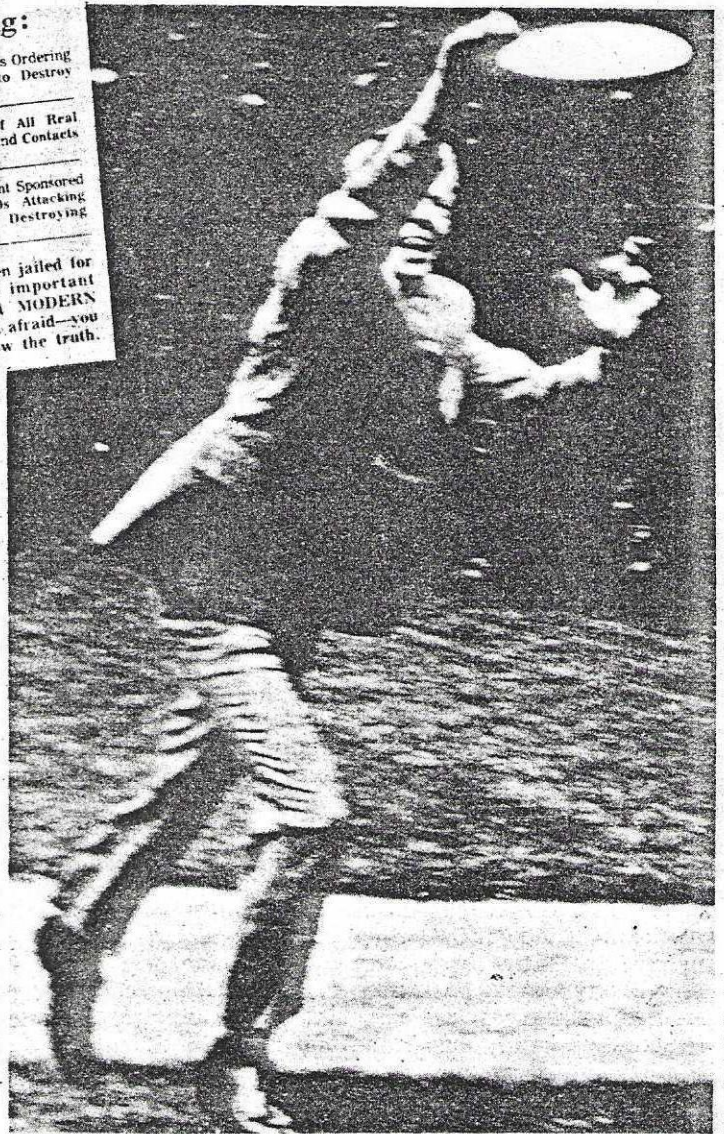
The criticisms are essentially these: ufology allegedly refuses to play by the rules of scientific thought, demanding instead special exemptions from time-tested procedures of data verification, theory testing, and the burden of proof. Ufologists assert the existence of some extraordinary stimulus behind a small fraction of the tens of thousands of UFO reports on file. The cornerstone of the alleged proof is the undisputed observation that a small residue of such reports cannot at present be explained in terms of prosaic (if rare) phenomena. Yet this claim is invalid: it is clearly not logical to base the existence of a positive ("true UFOs exist") on the grounds of a hypothetical negative ("no matter what the effort, some UFO reports cannot be explained").

Rumours, lies and fraud

This latter fallacy can be called the "residue fallacy", and it has been addressed by philosophers of science numerous times in the past, apparently without effect on ufologists. Writing in *Science* magazine in 1969, Hudson Hoagland expressed it as follows: "The basic difficulty inherent in any investigation of phenomena such as those of . . . UFOs is that it is impossible for science ever to prove a universal negative. There will always be cases which remain unexplained because of lack of data, lack of repeatability, false reporting, wishful thinking, deluded observers, rumours, lies, and fraud. A residue of unexplained cases is not a justification for continuing an investigation after overwhelming evidence has disposed of hypotheses of supernormality, such as beings from outer space. . . . Unexplained cases are simply unexplained. They can never constitute evidence for any hypothesis."

It is not necessary to conjure up visions of blind, drunk and dishonest UFO percipients to cast doubt on UFO reports. The vast majority of UFO witnesses apparently are honest, sober and intelligent people faced with an extraordinary perception. Yet there are amazingly many obvious and subtle ways in which such perceptions can be understandably generated. And there is bound to be an artificial residue of unexplained cases, a residue created purely by bizarre coincidences, by limitations on human perception and memory, or by rare undocumented natural occurrences. Additional sources of unexplained sightings could be human activities which are never publicised due to military security, to the illegality of the activity, or to

The press has done its bit to convince the world that UFOs exist (left) but few newspapers report negative results. The famous Carter UFO is open to severe doubts (right Jimmy Carter with a frisbee), but these are rarely mentioned when the media mention the President's UFO

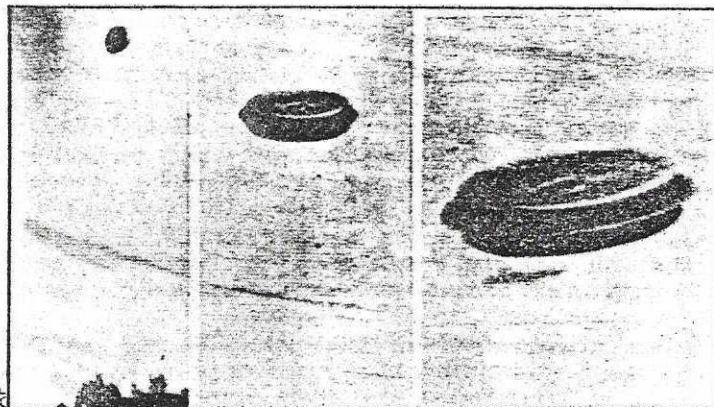
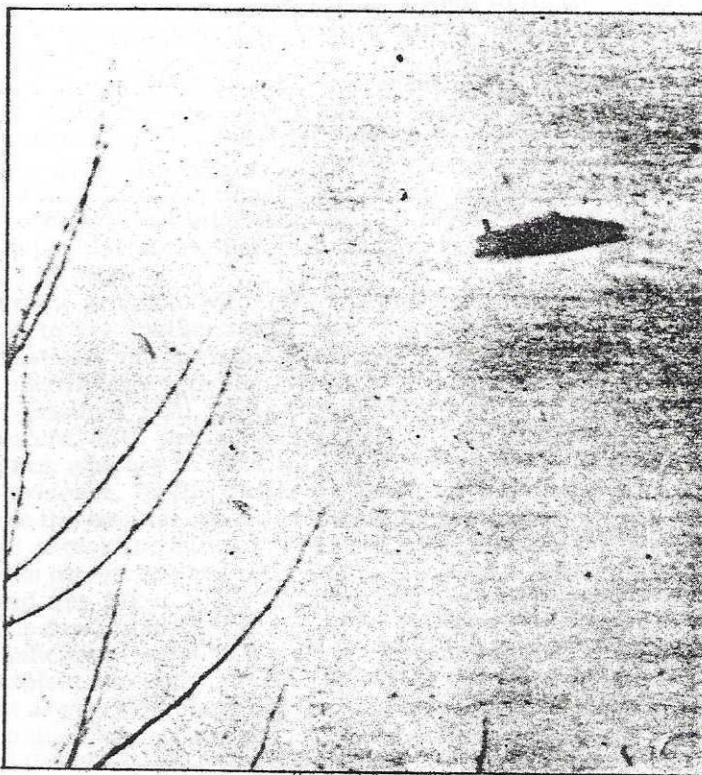


Time/Bob McNeely

plain ignorance on the part of the human agents of the activity that they had caused such a fuss. That residue will never be solved, and no extraordinary stimulus need be referred to.

In a similar fashion, the existence of unsolved crimes, unfound missing persons, unexplained aircraft or automobile accidents, and similar all-too-familiar manifestations of our less-than-perfect knowledge of events cannot be taken to prove the need for the existence of some extraordinary criminals, some extraordinary kidnappers, or some extraordinary traffic saboteurs. "Unexplained cases are simply unexplained," to repeat Hoagland's perceptive assertion. "They can never constitute evidence for any hypothesis."

To dedicated ufologists, such a line of reasoning is denounced as a confusion between IFOs ("identifiable flying objects") and true UFOs. According to Dr J. Allen Hynek, whose Center for UFO Studies in Evanston, Illinois, finds that at least 95 per cent of all UFOs reported to it are in fact IFOs: "Experienced investigators quickly recognise IFOs for what they are . . . but sometimes it takes hard work to unmask the masquerader."



More UFOs from the 1960s: two teenagers spotted the UFO on the left on Lake St Clair, Michigan; two 12-year olds photographed the other objects (right) in 1966. They are just two of hundreds of similar UFO photographs

Sceptics such as aviation journalist Philip J. Klass take exception to Hynek's confidence and point to cases published by his own centre, cases which were solved only by strokes of unexpected luck on the part of researchers. All too often, these sceptics claim, the "hard work" prescribed by Hynek is absent—and the "sheer luck" which allowed the unmasking of some tricky IFOs masquerading as UFOs is not available. The result is that many (if not, as sceptics claim, all) of the official UFOs on the list of unsolved cases are still camouflaged IFOs.

Such a hazy line between IFOs (which provide only data about the limitations of the reliability of eyewitness testimony) and UFOs (which are alleged by ufologists to mark a potential breakthrough in human science) is an appallingly weak basis for the foundation of the new would-be science of ufology. That weakness is accentuated by another highly suspicious and non-scientific feature of ufology: an extremely cavalier attitude towards verification of data.

Advertising tricks

Ufology is still struggling to achieve scientific and popular respectability, so it is perhaps understandable that public pronouncements of ufologists would be primarily in the persuasive rather than expository vein. It can thus be observed that all the traditional tricks of the Madison Avenue advertising executive's trade are followed: appeals to authority ("Jimmy Carter saw a UFO"; "our heroic astronauts have seen UFOs!"); assertions of the consequent ("the Universe is so large that other civilisations *must* exist out there!"); the bandwagon appeal ("Most Americans now believe in UFOs!"); the conspiratorial appeal ("The government knows all about it but is hiding the truth"); and the salvation appeal ("The people from space will come to bail us out of our self-inflicted miseries"). It is not necessary at first to examine the actual validity of such statements. What is important is to recognise them for what they are: tactics of illogical persuasion.

At the same time, most of what is commonly published about ufology is undeniably nonsense. UFO proponents such as Hynek are as adamant in the criticism of the news

media exploitation of UFO stories as any sceptic could be. For the publishing industry and the news media, UFO stories are good business; they combine human interest, comic relief, scary stories, and swipes at government cover-ups and know-it-all scientists. It is based on such misinformation (and not a little disinformation) that the vast majority of the public has formed its attitudes about UFOs. To say, then, that "most Americans believe in UFOs" is to testify not to the scientific credentials of ufology but to the effectiveness of the media mythmakers.

Few choose to look behind the myths. The much-touted "Jimmy Carter UFO", for example, was *never* investigated by any of the ufologists who flaunted it or by any of the newsmen who advertised it—they simply passed it on as a good story, a useful anecdote. Yet when one sceptical young investigator named Robert Sheaffer tracked the case down, he uncovered gross inaccuracies in Carter's four-year-old recollections of the date and location of the event, and also came up with testimony from other witnesses which helped determine an entirely prosaic solution to the account. Nevertheless, the "Jimmy Carter UFO" is still constantly being referred to by UFO spokesmen who, due to an unconscious media blackout of sceptical work such as Sheaffer's, probably do not even know or care that it has been investigated and "solved".

Another glaring example of the total disregard for authenticity of evidence by most ufologists is the oft-repeated assertion that "astronauts have seen them too". Dozens of accounts have been collected of space pilots seeing and photographing UFOs; more than 20 such stories were featured in Hynek's *Edge of Reality*, a book which was billed as a "progress report" on the state of ufology.

Yet not one of these cases has any relevance to "true UFOs", as they are for the most part frauds and hoaxes conjured up by unscrupulous writers and UFO buffs (several blatant photographic forgeries have been identified in these stories), or misunderstandings by citizens concerning the meaning of ordinary space jargon, or in a few cases, reports of passing satellites which in no way appear to be extraordinary. Yet with selective omission of explanatory data, with exaggeration, misquotation, or even fabrication of alleged "voice transcripts", and with deliberate accusations of "government cover-up", such stories form a major pillar of the public's "belief" in UFOs.

Hynek visited NASA's Houston space centre in July 1976 and was shown the original films and tapes involved in the most publicised space UFO stories. He later told colleagues that he deeply regretted including the UFO stories in his book without verifying them, and that he was satisfied that no "true UFOs" were among them. Referring to the astronaut-UFO stories in an interview with *Playboy* in

January 1978, Hynek testified that, "I went to Houston and saw the photographs, and I must confess that I was not impressed."

The "Carter UFO" and the "astronaut UFOs" underscore a key problem in the acceptance of ufology as a science: ufologists in general have not been as willing as Hynek to retract endorsements of explained cases, and have preferred instead to continually recirculate and embellish the same stories. The authenticity of UFO reports, as portrayed in the popular press, therefore remains highly questionable—and justly so.

Such a problem with the "disproof" of UFO evidence points to yet another major weakness of the philosophical foundations of ufology. The burden of proof, which customarily lies with the claimants of supernormality (or, in a criminal trial, of the guilt of the accused, who is "innocent until proven guilty"), has been shifted to the sceptics, who are in the case of UFOs required to *disprove* the evidence. In the Carter-UFO and the astronaut-UFOs, it was the sceptics who investigated and solved the cases—while ufologists assumed the cases were authentic until proven otherwise (and most still believe so).

And yet the rules of science are clear: extraordinary claims demand extraordinary proof. The thesis of ufology is an indictment against the ability of contemporary science to explain the Universe, and it must prove such an indictment as every other such proponent must prove it: the need for a modification of our current model of reality must be established beyond reasonable doubt.

The very foundation of ufology is contrary to this time-tested procedure. For ufologists, the mere existence of unsolvable cases is allegedly proof of the need to modify modern science. For ufology, extraordinary reports can be considered to be valid data until disproved. And, in the most devastating departure from scientific methodology, ufologists reject the concept of "falsifiability" of scientific theories.

No theory can be considered scientific until it can be formulated so as to be disprovable, or falsifiable. That is, the theory must explain a portion of the Universe in such a way that further observations or experiments will either fail or conform to the theory's predictions, or *will* conform to it (while, preferably, not conforming to traditional predictions). Einstein's prediction of the bending of star light observed near the Sun during a total eclipse is a

famous example of such a procedure.

Yet after three decades of aimless speculation, no scientific theories worthy of the name have been produced by ufology. It is thus a sterile "science". Every wild speculation is touted as a "new theory", yet none of them makes predictions which would, by not coming true, discredit the theory. Here again, the processes of thought which characterise "ufology" cannot be classified as "scientific".

The most regrettable aspect of this current unscientific state for "ufology" is that it is not a judgment on the actual validity of many of the published speculations about what might be behind the "true UFO" sightings (if any exist). Alien spacecraft could well be visiting Earth, and there are at least a dozen valid reasons why "they" might decide not to make overt contact, while allowing Earthmen to catch glimpses of them. UFOs might well represent some other phenomenon, such as "psychic projections", "time machines", a terrestrial but undiscovered civilisation or life form, or many other similarly bizarre possibilities. The only thing that can be said scientifically is that none of these suggestions has been even suggested, much less proved in any rigorous sense.

The pity is that if such eventualities should come to pass, and the ufologists are proved "right", they will in all probability have impeded rather than accelerated the acceptance of that phenomenon by traditional science. This is because the new theories will most likely be championed by those ufologists already badly discredited by too many cries of "wolf!", by too many endorsements of what subsequently turned out to have been hoaxes, and by too many anti-scientific assertions and claims. They would be "right" only by accident, not by their own virtue.

What is ufology?

If ufology is not a science, what then is it? It might be considered as a protest movement against the impersonality and specialisation of modern science, which has all but eliminated the role of the "citizen-scientist", the amateur investigator who in the past contributed substantially to the development of science through part-time dabbling. Belief in UFOs is also an undeniably attractive "ego trip", a posturing of inside information and secret lore, the possession of which puts its intimates apart from and above the rest of the unimaginative world. Such speculations demand more scientific attention of sociologists.

Nor would it be fair to judge ufology by the quality and quantity of the outright crackpots whom it attracts—other fields, such as medicine, religion, education and economics, have certainly attracted crackpots as well. Yet it cannot be overlooked that ufology seems to have attracted more than its fair share of cranks, and that it has failed to police adequately its own ranks in this regard.

Where is the "ufology" movement likely to be after another 30 years? Perhaps new evidence will finally appear which can stand up to scientific scrutiny. Perhaps self-styled ufologists will establish truly scientific standards of evidence, will accept the burden of proof, will produce "falsifiable" theories, and will seek to formulate their science on positive rather than negative logic. Perhaps something significant will come out of this after all.

Many sceptical observers join ufologists in hoping so, because if any of the claims of ufology prove valid it would indeed rate as a major scientific breakthrough, perhaps one of the most important such events in human history (even if not, the UFO movement would then "merely" be the most powerful public delusion of the century, which is in itself well worthy of sociological and psychological study). But in more cynical moments, such sceptics fall back upon the famous quotation attributed by Boswell to Samuel Johnson when he learned of the news of a friend's second marriage. "Ahh," Johnson is quoted as saying, "the triumph of hope over experience." □



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