

Hume on Miracles and UFOs

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ABSTRACT: A miracle is defined as a violation of or intercession in the laws of nature. Some recent reports of UFO phenomena are such that UFOs may satisfy that definition. In this paper, we ask how Hume’s famous argument in “Of Miracles” relates to UFOs. We argue that his critique fails and that some well corroborated UFO reports are such that they justify a belief in miracles (qua violations of laws of nature).

KEY WORDS: Evidence, Hume, Miracles, UAPs, UFOs.

1. Introduction

What should rational people think about the things that were, in the oldendays, called flying saucers? What should we believe about those blips in the sky that the *X-Files* made for us a staple media diet? Are they the crafts of alien beings from another planet? Are they part of some clandestine aerial research project deployed by some foreign military power? Or are they simply illusions, explicable by all the well-known shortcomings of our fallible powers of observation?

For anyone of a moderately sceptical bent, flying saucer reports (newly dubbed by the US government reports of “UAPs”: unidentified aerial phenomena) have been taken to be, by and large, largely uninformative. Reports of these objects have often been anecdotal or embellished by the observer’s background beliefs. And such reports have usually not

been corroborated by other observers or by other observational tools. Throughout the 20th century, most reports of unidentified flying objects (UFOs), flying saucers, foo fighters, etc. came from lone (or non-independent) witnesses. They were often such that the observers in question leapt to conclusions about the phenomena they were witnessing (e.g. that they were aircraft or “little green men” (Condon 1968: 963)). And eyewitness accounts, however compelling, were often reported long after any independent corroboration could be obtained. In short, there were plenty of good reasons to think that accounts of flying saucers ought not to be taken too seriously.

There is an interesting parallel to be made. In many ways, reports of flying saucers are similar to reports of religious experiences such as mystical experiences or observations of miracles. Just like UFOs, reports of religious experiences often suffer for their anecdotality (Hodges and Scofield 1995), their theory-ladenness (Russell 1935: 180), and their recalcitrance to scientific investigation (Scott 1996). And moreover, some UFOs, just like miracles, appear to defy the laws of nature.

And, just as it has been for miracles and mysticism, debunking arguments for UFO phenomena has largely won on the day. Like the debunking arguments for religious experiences, scientists have typically explained away mysterious flying saucer reports by appeal to non-mysterious phenomena like “swamp gas” or optical illusions (Condon 1968: 898; 975–7). Even if flying saucer reports *really were* reports of unknown aircraft in the sky, few reports have ever managed to justify this claim under the muster of scientific scrutiny. It’s just the old adage: Extraordinary claims require extraordinary evidence. And, so far at least, the evidence has been taken to be far from extraordinary.

But it seems that times have changed. In the 21st century, some reports of UFOs have been corroborable, have been corroborated, and are suggestive of the existence of advanced aerial technology, technology which may even be said to defy the known laws of nature. It’s a problem demanding an explanation. We are no longer in a situation wherein a few crackpots have reported seeing lights in the sky. We are in a situation wherein credentialed pilots, radar operators, independent witnesses, and various tools of measurement seemingly *converge* on the existence of some flying objects which are inexplicable by appeal to any known phenomena and which are seemingly incompatible with contemporary scientific theory. They are, then, *miraculous*, in the sense that they appear to constitute departures from scientific laws. We have our extraordinary evidence, so now what? What can we *possibly* say about such things?

In this paper, we will bring Hume's famous argument in "Of Miracles" to bear on the question of UFOs. We conclude that Hume's argument fails when it comes to this new and very strange kind of miracle. This result may give solace to the defenders of miracles of the religious kind, providing as it does a framework for the corroboration of some other miraculous events. But our thesis is ultimately more narrow. In essence, our argument is just that some UFO phenomena are *both* miraculous *and* reasonable to believe in. Doubtful? Read on.

2. From Project Blue Book to the Congressional Hearings

In 1952, the United States Air Force (USAF) began to systematically investigate reports of unidentified flying objects by the establishment of Project Blue Book. Two earlier investigations, Project Sign and Project Grudge, were short lived, lasting between 1948 and 1952 (Swords 2000). Blue Book, by comparison, would continue to investigate anomalous aerial phenomena until its dissolution in 1969. In its 17 years of study, the project collected a whopping 12,618 reports of strange aerial phenomena, 701 of which remained unexplained after lengthy, critical investigation (FBI 1977).¹ According to Edward Ruppelt (the director of Project Blue Book until 1953), the Air Force had been prompted to launch more thorough investigations of UFO phenomena primarily because of some well-substantiated sightings occurring in 1947 and 1948, which together raised serious concerns about US national security (Ruppelt 1956).

The first sighting to raise real concerns occurred in June, 1947, when a pilot named Kenneth Arnold witnessed nine bright or shiny objects travelling at a great speed (which he estimated to be around Mach 1.6) in the area of Mount Rainer in Washington State. Arnold's report was corroborated by other Washingtonians, who likewise claimed to have seen lights travelling at unusual speed near Mount Rainier on the same day (*ibid.*).

But it was the quality of Kenneth Arnold's report that cocked the eyebrows of the investigators at the time. His real-time estimate of the speed of these objects was, in particular, taken to be reliable. And supersonic flight was then in its bare infancy.² If these were supersonic

¹ It is interesting to note that more than 300 of these "unexplained" reports came from a single year: 1952.

² Chuck Yeager first broke the sound barrier in level flight with the experimental Bell X-1 jetplane in 1947. He managed Mach 1.05 (Walz 1947).

craft, USAF should have already been aware of their presence in the area. And, according to official accounts, they were not.

In the year that followed, the United States was feverish with reports of unidentified aerial phenomena sweeping the country. Three sightings in particular (nicknamed *the classics* by Blue Book researchers) would demand special attention.

The first was the “Mantell incident,” in which a USAF pilot, Thomas Mantell, plummeted to his death while attempting to close in on an ascending UFO over 20,000 feet in Southern Kentucky (Ruppelt 1956: §3). The second of *the classics* was the so-called “Chiles-Whitted encounter,” during which two commercial pilots reported sighting a UFO from a DC-3 while flying over Alabama. They described it as having a “deep blue glow” on its underside, with “two rows of windows from which bright lights glowed.” A “50-foot trail of orange-red flame” was said to shoot from out the back (*ibid.*). The third of *the classics* was the “Gorman Dogfight,” a case in which a World War Two veteran and national guardsman pursued what he described as a very small ball of light “6 to 8 inches in diameter” which had repeatedly attempted to ram his Mustang. The strange light was reported by other pilots who had been participating in the same cross-country flight (*ibid.*).

The so-called *classics* constituted some of the most impressive reports that Blue Book would investigate in its 17 years of activity. They all seemed to suggest that something bizarre was going on in the skies. However, when Blue Book was finally disestablished in 1969, USAF officially maintained a tone of scepticism with regards to any “spooky” explanations of its remaining 701 unexplained cases, i.e. explanations that might try to appeal to hypotheses about extraterrestrials or hitherto unknown advanced aircraft. “The Air Force emphasizes the belief,” wrote Lt. Col. Lawrence Tacker, later quoted by Ruppelt, “that if more immediate detailed objective observational data could have been obtained on the ‘unknowns’ these too could have been satisfactorily explained” (Tacker 1960: 47). In other words, insufficient data, rather than any theoretical shortcoming, was the ultimate cause of our ignorance with regard to those remaining cases. Mundane things like swamp gas, the planet Venus, or weather balloons would almost certainly have ended up adequately explaining the leftover sightings. So concluded USAF.

The dissolution of Blue Book was decided after review of the Condon Report, published in 1968 by the University of Colorado UFO Project. The Condon Report embarrassed USAF by concluding that

... nothing has come from 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. (Condon 1968: 1)

There was some pushback to the Condon Report. Notably, the physicist James McDonald wrote a rebuttal to Condon in the following year. The rebuttal stated that all USAF investigations had been scientifically substandard and that the Condon Report itself could not explain the majority of the cases which it had cherry-picked for itself (McDonald 1969). Nevertheless, in 2003, USAF released the following conclusions to the public about what Project Blue Book had achieved during its active period:

No UFO reported, investigated and evaluated by the Air Force was ever an indication of threat to our national security; there was no evidence submitted to or discovered by the Air Force that sightings categorized as “unidentified” represented technological developments or principles beyond the range of modern scientific knowledge; and [t]here was no evidence indicating that sightings categorized as “unidentified” were extraterrestrial vehicles. (USAF 2003)

After the closure of Project Blue Book, it had been the official story of the US government that all systematic investigations into UFO phenomena had been abandoned.

But recently, in 2017, several reputable newspapers, such as the *New York Times* and *Washington Post*, reported that another US government-led UFO project had been active between 2007–2012. This new study has been dubbed the Advanced Aerospace Threat Identification Program (AATIP) (Cooper *et al.* 2017; Rosenberg 2017). This disclosure was a surprise to many. It not only suggested that UFOs were commonly encountered by USAF pilots, but that they were regarded as a hazard. And that was not all. Another program with an equally ugly acronym (UAPTF) was later found to have succeeded AATIP after its own dissolution in 2012. Contrary to popular belief, the United States Government continued to look at these anomalous reports after the closure of Blue Book.

The acknowledgement of these 21st century investigations caused popular opinion on UFOs to undergo a sea change. In part, this was due to a well-publicized scandal. AATIP’s putative director, Luiz Elizondo, resigned from the Pentagon in 2017, citing disgruntlement about excessive secrecy with regards to UFOs and open ridicule by higher authorities (Kloor 2019: 49).

Before his resignation, Elizondo had led an effort to declassify three video files of UFOs, which were released by former Deputy Assistant Secretary of Defense for Intelligence, Christopher Mellon, via the website of an organization called To the Stars Academy of Arts and Sciences. The video and audio recordings represented cockpit instrumentation displays as fighter pilots chased mysterious objects flying in ways which—at the very least—far surpassed any contemporary technology. This quasi-leak reignited popular interest in UFOs and granted the topic a new air of respectability. The videos were picked up by many media outlets, and they were confirmed as authentic by the Pentagon three years later (Martinez 2020).

These events were together the catalyst for the eventual 17 May 2022 United States Congress Hearings on UFOs, a landmark public hearing on the subject. Nowadays, it seems, to take UFOs seriously is not kooky or unfashionable, but sensible or even, perhaps, urgent.

3. UFOs and the Physically Impossible

Do these reports of anomalous flying objects demand our attention? They are interesting stories, for sure. But what does any of it have to do with philosophy, let alone philosophy of religion? Shouldn't this all be a matter for aerospace science? Well, we take it that some of the phenomena that have been witnessed and measured—if confirmed to behave in the strange ways described—are miraculous in the traditional sense of being *physically impossible*. For that reason, the UFO problem is not simply a scientific matter of “following the evidence where it leads.” For in this case, the evidence may suggest that something physically impossible is happening. Therefore, we cannot answer the question about what we should believe about reports of UFOs before first answering a more fundamental question: Can it be reasonable to believe that physically impossible events can occur? And that question appears to be prior to (or perhaps even directly *in conflict with* (see Ruse 1982)) scientific reasoning. It is also the kind of question that has been explored largely within the field of philosophy of religion with reference to religious miracles (McGrew 2019).

The videos released by Mellon, along with the pilots' observations and instrumentation displays, are very troubling in just this respect. They seem to constitute evidence that events are happening which should not possibly, physically happen. And if these are well corroborated instances

of physically impossible events, then they are miraculous, and so what can we even begin to believe about them? Should we simply discount them? As Hume might have asked rhetorically, were he still with us: “Isn’t the best evidence against the existence of these alleged, mysterious aircraft the very fact that they are claimed to violate the laws of nature?” Hopefully, the philosophical import of these kinds of UFO cases is clear enough.

Now, there are two different senses in which some UFO phenomena may be understood to be impossible. It is imperative to keep the distinction clear. First, the phenomena may be understood as being *technologically impossible*. That is to say, given the technological limitations of a particular era, no craft could be built that could operate in the manner described. Very often, when UFO behaviour is described as “impossible” it is the notion of *technological impossibility* that is being appealed to. Kenneth Arnold’s UFOs, for example, were clear-cut cases of technologically impossible aircraft. If his estimate of the speed of the flying objects is reliable, then the objects traveled at speeds well in excess of anything that the technology of the day would allow. If they were aircraft, they could not have been built by human beings. Nowadays, of course, many kinds of craft can be built that far exceed such speeds.

In this paper, our focus is on the *physically impossible* characteristics of some UFO reports. The idea is that what is physically impossible is not hostage to the fortunes of future technology or know-how. If a flying object exhibits physically impossible characteristics, then it behaves in a way which contradicts the laws of nature. It is not the case that, some day, we could build such an aircraft. Such an aircraft could simply never be built.

To clarify the distinction, take what is now known as the USS Nimitz sighting, which occurred in 2004. In this UFO encounter, Captain David Fravor and Lt. Commander Alex Dietrich were each flying Boeing Super Hornets with their own copilots. Suddenly, in the middle of a training exercise, they were interrupted by a real world event, and dispatched to intercept several flying objects within the exercise’s restricted airspace. The objects had been identified by radar operator Kevin Day. When Fravor and Dietrich arrived at the coordinates provided, they and their copilots saw an object, resembling a giant white “tic tac” (about 12 meters long) hovering above water which was visibly churning. When Fravor descended to intercept the object, it began to ascend towards him. It then vanished before his eyes (Fravor 2021).

Having lost visuals on the target, a third fighter jet piloted by Chad Underwood was dispatched to search with a forward looking infrared camera. The object which the infrared eventually detected “wasn’t behaving by the normal laws of physics,” stated Underwood during a later interview (Underwood 2019). Although it was impossible for him to *visually* corroborate the existence of any object at the distance that the infrared camera could detect, an object was recorded by the camera flying at high speed without any apparent means of propulsion. As he would later state in an interview with *The Intelligencer*, he was troubled by the object’s lack of any observed means of lift, its lack of any observed source of propulsion, and its ability to move from an altitude of “50,000 feet to, you know, a hundred feet in like seconds, which is not possible” (ibid.). Moreover, these hypersonic maneuvers were observed to occur without the emission of sonic booms, which is, again, impossible, so long as we assume that these truly were massive objects moving through the atmosphere.

Now how do we sort the *technologically impossible* characteristics of these observed UFOs from the *physically impossible* characteristics? We can note a few of the characteristics of the phenomena as impossible: They flew in various directions and to high altitudes, despite having no means of lift or source of propulsion. They flew against the wind and turned on a dime despite having no apparent flight control surfaces. And they flew at both supersonic and hypersonic speeds at an instant, exerting *g*-forces which would crush any contemporary aircraft, without producing sonic booms.

All of that is, so far as we know, *impossible*. But in what sense? If all this behaviour is *technologically impossible*, that is an interesting result that may direct us towards speculative hypotheses about, say, covert tech programs or extraterrestrials. But if the behaviour can justifiably be thought of as *physically impossible*, that is a much stranger and more worrying result.

Now, some of these characteristics may be best thought of as merely technologically impossible (perhaps, in the distant future, maneuverable hypersonic craft might be built that have no apparent flight control surfaces). But other characteristics may be harder to imagine as technological possibilities (a massive, hypersonic craft that produces no sonic boom at all, for example, seems near impossible to square with the ideal gas law). Ultimately, cleaving the physically impossible from the technologically impossible is no easy task. How we divvy up what is physically or technologically impossible hinges on both the current state

of our scientific understanding as well as the current (and foreseeable) state of our technology. All we can do is weigh the relative likelihoods. In short, a scientific optimist may take all mysterious UFO phenomena to be achievable by some future technology. A pessimist may take none of it to be. An optimist's decision may be based on an inductive track record of our progressively nearing the capabilities described (e.g. the idea that we can trace a line from Chuck Yeager's first supersonic flight to contemporary hypersonic craft and onwards into the faster future). Whereas a pessimist's decision may hinge on more general, lawlike limits on aerodynamics and atmospheric physics (e.g. the idea that the shock waves of massive bodies moving through the atmosphere cannot be eliminated).

4. Hume, Miracles, and the Physically Impossible

We follow Hume in defining a miracle as "a violation of the law of nature" (EU, 10.12/114). UFO phenomena like that witnessed in the Nimitz case suggests that we may be dealing with something miraculous. Of course, in everyday language, a "miracle" is said to have occurred whenever events we seriously doubted would happen end up happening—events like winning the lottery, surviving a major accident, ridding oneself of cancer, etc. But, they are not the kinds of "miracles" that we are talking about.

We are talking about the sorts of miracles that have often been claimed to have been caused by religious figures, such as Jesus of Nazareth. Jesus was claimed to have turned water into wine, raised the dead, made living doves out of clay, and to have risen from the dead. It is events like these (departures from (or intercessions in) the natural order) rather than winning the lottery, that we have in mind.³

And that's where the important question arises: Is it reasonable to believe that such events *could* occur or *have* occurred? Hume famously argued the negative. Miracle claims are always *intrinsically* unjustifiable. He has two central pillars to his argument.

The first has to do specifically with testimonial evidence. In the most quotable passage in "Of Miracles," he writes: "No human testimony can have such force as to prove a miracle, and make it a just foundation for

³ Of course, one could also describe these "miracles" as *technological* impossibilities. One day, perhaps, future humans will routinely resurrect the long-dead and make living things from clay. The science behind Jesus' abilities will be understood and non-mysterious. This point bears noting—the problem of cleaving the technological from the physical impossibilities is not a problem restricted to UFO reports.

any ... system of religion" (EU, 10.34/127). Why not? There are four ideas underpinning Hume's reasoning here, but we're going to mention only the three that are salient to UFO phenomena.

First, says Hume, for all the testimonies about miracles, there is not a single example of testimony given by eyewitnesses which, in terms of number (quantity) and intellect (quality), could not be better explained by delusion. That is, the probability that eyewitnesses were deluded is always greater than the probability that they have had an experience of an authentic miracle.

Second, people's enthusiasm regarding surprising things, such as miracles, causes them to accept and spread claims about miracles to others uncritically. "The pleasure of telling a piece of news," said Hume, "so interesting, of propagating it, and of being the first reporters of it spreads the intelligence" (EU, 10.19/119). Here, with reference to UFOs, we might think of Fox Mulder's favourite wall hanging: "I want to believe." The mysterious is so attractive to the human mind because it violates our innate expectations about how certain sorts of things must behave (Boyer 1994). To quote Hume himself in his other writings, "Amazement must of necessity be raised; mystery affected; darkness and obscurity sought after" (NHR, XI).

Third, belief in miracles comes from, to a large extent, "barbarous nations" (EU, 10.20/119). Perhaps, the term "barbarous nations" is politically incorrect in the current era. Such a phrase is, of course, understandable considering that Hume was a child of his era—the Enlightenment—with its various presumptions about the intellectual capacities of non-Western peoples. It may be better to understand "barbarous" here as a society that has not embraced anything close to a scientific approach. Despite the whiff of racism, what Hume meant was entirely plausible. "Uncivilized nations" lack a systematic way of explaining natural events—such as natural disasters or pandemics—apart from appealing to "prodigies, omens, oracles, or judgments" (EU, 10.19/120). "Uncivilized nations," by lacking the critical standards of science and by embracing a world picture bereft of natural law, are apt to understand the world in an unsystematic or symbolic way.

That is the first pillar of Hume's sceptical argument in "Of Miracles." This pillar is restricted to the question of testimonial evidence. His cynicism towards the typical testimonial evidence of miracles is not supposed to count as proof that miracles are *impossible*. What Hume attempts to show by these particular arguments is *only* that it is not reasonable for

someone to believe in miracles on the strength of the available testimonial evidence (Fogelin 2003). A fair claim, we say.

However, the second pillar of Hume's argument holds up a stronger claim. This second pillar is, we think, much more salient to our discussion. For it is here that Hume suggests that it is generally *impossible* to justify the claim that a miracle has, in fact, happened. Why so? Well, for Hume, there is always counter-evidence for an alleged miracle which is about as strong as any evidence we might have for any claim at all. And that evidence is right around us: It is our experience of the regularity of the laws of nature. To quote Hume, "and as a firm and unalterable experience has established these laws, the proof against a miracle, from the very nature of the fact, is as entire as any argument from experience can be imagined" (EU, 10.12/114).

What Hume is trying to say here is that we have no greater evidence for any supposition than that there exist laws of nature (or a regularity to the natural order) that are firm and unalterable. We simply *can't* justify miracle claims because we would require evidence sufficiently strong to overthrow the claim that nature is uniform, a possibility which borders on self-defeating. (How, after all, could we even make sense of the notion of *evidence* in a universe without a strict causal order?). Thus, it seems that we, if we are wise, should never believe that a miracle has happened, because after all, "the wise person proportions his or her belief to the evidence" (Basinger 2018: 33).

How does this part of Hume's argument apply to miracle claims? Let's take an imaginary scenario. Let's suppose that one day we heard the testimony of an eyewitness to an alleged miracle. Say, an old lady found that through the prayer of a pastor, a young man was caused to levitate. It seems there are two methods that we could use to evaluate her claim.

First, we could respond to the old lady's testimony in the way suggested by Yujin Nagasawa. We could dream up something like an imaginary balance scale that weighs the evidence for and against the occurrence of the event (Nagasawa 2017: 79). On the left side of the scale, there is the evidence for the levitation occurring, while on the right side of the scale, there is the evidence against its having happened. Then, we need only ask on which side the evidence is more weighty.

We first collect evidence for the left side of the scale: The old lady is a reliable witness and has never lied about such hefty matters before. Perhaps we then interview the man who levitated and he corroborates her testimony. The pastor is then interviewed, and he corroborates what

the other two have said. Moreover, the pastor had a camera on him at the time, and he *photographed the levitation as it happened*.

We move to the right side of the balance scale. And here the evidence is of a more general nature. There is no available *theory* about how some men may make others levitate. And there is no theory just because this kind of event is not known to typically occur. There is the well known phenomenon of *folie à deux* and shared delusional disorder. There is the fact that the witness is elderly and the fact that perception becomes less acute with age. The photograph, while perhaps persuasive, may be found to have characteristics that suggest a hoax or manipulation. And lastly, perhaps strongest of all, there are “the laws of nature,” says Nagasawa. The laws of nature “provide extremely strong evidence—possibly the strongest evidence we can imagine—against miracles because they are established on the basis of firm and uniform observations of the operation of nature” (2017: 81).

The “Nagasawa method” leaves open the *possibility* that some alleged miracle may be shown to be veridical. To prove a miracle would be extremely difficult. But still, we would just require the right kind of evidence.

Nagasawa’s method is not the only one available. We could approach the old lady’s claim in a more austere naturalistic fashion. J. L. Mackie gives us a sceptic’s fork: On the one prong of the fork, we can say that the event may have occurred, but instead of considering it as a violation of natural law, we can suggest that such events might happen “in accordance with the laws of nature” (Mackie 1983: 26). In other words, while it is possible that the old woman in the church service truly saw a man levitate, that need not mean that a miracle has happened. Instead, the man’s levitation may have been caused by a natural process with which we are currently unfamiliar. So, it is not a miracle in the sense of being naturally impossible. It is just a very strange natural event.

The second prong of the fork? Mackie says: “The other is to say that this event would indeed have violated natural law, but that for this very reason there is a powerful presumption against its having happened which it is most unlikely that any testimony will be able to outweigh” (26). Following the second prong of Mackie’s argument, we would deny the miraculous levitation on the grounds that it is claimed to violate the laws of nature. Mackie’s fork is something of a “heads I win, tails you lose.”

Where UFO reports are concerned, we could approach the claims as either a Nagasawa or a Mackie. We could, first, weigh the evidence

for and against, and decide whether to believe or disbelieve. Or we could make for ourselves a couple of naturalistic prongs to choose between. We could suggest that there exist natural phenomena that could explain the observations or we could suggest that since the UFO is claimed to violate the laws of nature, it most probably couldn't be an object behaving in the ways described.

How would Mackie's approach deal with UFO reports? Of course, it would be dismissive of anything miraculous. His approach would lead us to conclude that either 1. UFOs are natural phenomena, or 2. UFO reports, whatever their cause, are not the result of anything miraculous.

The trouble with Mackie's first prong is that no known natural phenomenon (weather balloons, cloud formations, etc.) cuts the mustard. If a radar operator, infrared cameras, *and* eyewitnesses all observe a flying object traveling at hypersonic speed without emitting a sonic boom, then we may be at a loss to explain this by appealing to anything natural. Nothing natural *does* this, and nothing natural, it seems, *could do* this.

Mackie's second prong is equally problematic. It is not so simple to discard UFO reports on the grounds that they make claims of law-violations. For it may be, as Hume might be the first to remind us, *more* miraculous that the testimony of these *various tools of observation and measurement* be mistaken than that the claimed law-violation did not occur. The very reliability of the tools of observation and measurement depends on the supposition that there exist laws of nature that are firm and unalterable. We may therefore infer, quite reasonably, that if the laws which guarantee the reliability of the observational tools are firm and unalterable, we have strong evidence that a hypersonic object indeed must have emitted no sonic boom.

Other philosophers have critiqued how Mackie's fork is so often applied to the UFO problem. Jeremy Butman directly addresses the Nimitz case, and while he doesn't appeal to the language of miracles to defend his position, he notes how the fork is so often dished out in the current debate. One can either "dismiss the claim a priori, trusting the established foundations of reality, or post hoc, by assigning a cause later on without evidence." But he adds that one may "elect to believe the claim, even if no explanation can be found to support it" (2022: 405). The claim here is not that there is *no evidence for a belief in UFOs*. Instead, the claim is that if the evidence points to inexplicable UFO behaviour, we are within our epistemic rights to believe despite having no broader theory within which the phenomenon can be accounted for.

The reasoning here may seem whimsical or flowery, but it relies on assumptions about (and a commitment to) the regularity of nature. For if the tools of observation used to track the UFO were various, operating in accordance with different physical laws themselves (and if we were reasonably confident that the tools in each case were not individually malfunctioning) then it is a fair inference that the target object actually exhibited the behaviours observed. It can then be argued to be *more* unlikely that 1. All of these methods of observation would converge on the same (bizarre) description of some object than that 2. The object in question actually defies a law of nature. In other words, the target's incredible behaviour, if corroborated by various reliable tools of observation, should itself count as evidence that a law has been broken.

If we deny this, we are in the even worse situation of having to claim that *all* of the tools by which we were studying the phenomena were faulty, all mistaken, even when they all converged on the same output to the same question. And this is a self-undermining claim. It would be like a carpenter repeatedly failing to break a window with a hammer *and* an axe, while wondering to himself "what the hell is wrong with this hammer? Why is this axe so useless?" Of course, it may be the window that's to blame.

5. Implications of Hume to the UFO evidence

So what happened on the USS Nimitz? The officers have given us their reports, the instruments have given their measurements, and, altogether, the data is troubling. Of course, there have been many thousands of UFO reports of varying degrees of reliability. Some can be explained as cases of mistaken identity. Some are just hoaxes. But some are not so easily explained. When the evidence comes from several reliable and independent sources and when the evidence indicates that the impossible has occurred, what can we possibly begin to think? Simplifying things, we can pick one of the following three options:

1. *Delusion*: The claims of law-violations were not correct because of honest mistakes
2. *Conspiracy*: The claims of law-violations were not correct because of deliberate deception
3. *Veridical*: The claims of law-violations were correct

Now, none of these options strikes us as inherently irrational as a general account of the alleged law-breaking characteristics of some well-

substantiated UFO phenomena. Naturally, each option faces its own problems that any proponent must be willing to admit. Our argument is not that the last of these options should always be preferred. That would be a very credulous claim. All that we wish to press is that the last option is not *inherently* unjustifiable as an explanatory tack, contra Hume. And that, for some of the best-reported cases of UFO reports, it may be the best available option.

Hume made much of the claim that miracle believers are likely deluded. While this may be true for a good many reports of religious miracles, it is a harder case to make for reports of UFO phenomena. One reason has to do with the sheer number of observational tools becoming simultaneously “deluded.” All the different tools of observation have misfired, at the same time, while painting the very same picture of the phenomenon in question.⁴ Such a suggestion may be as unlikely as the data needing explained (which is precisely what Hume demanded from testimonial evidence for miracles). For we should ask: Is it more likely that several different laws in different physical domains have been broken (e.g. the ones governing radar, infrared detection devices, and human vision) or that one group of laws has been broken (e.g. the ones governing sound waves)? To argue that all the tools of observation have misfired in unison is to endorse a claim that is independently very improbable. Of course, one could present several debunking arguments at once, seeking to undermine our faith in the reliability of each of the tools used. But without special reason to believe that *any* of the tools used were unreliable, it is hard to see how a convincing case could be made.

There is another reason that the delusion account is typically a stronger weapon against *religious* miracle claims than UFO miracle claims. Belief in religious miracles (whether in the form of, say, weeping statues or apparitions) is usually highly motivated. Religious believers are more likely to “see what they want to see.” The *interpretations* that believers give to their observations are often heavily theory-laden, making appeal to part of a wider theological or symbolic system. A shadow that dances across a wall, for example, may easily be taken by a credulous congregation as a miraculous apparition of the Virgin Mary. But this sort of interpretive gloss is typically lacking where UFO reports are concerned. UFO witnesses often *cannot* account for their observations within any

⁴ Of course, it may be our interpretations of the results of the tools that are to blame. Infrared may detect an object’s heat or it may detect heat in the atmosphere. If we conclude that an infrared reading alone is sufficient evidence for the existence of a solid object, this may be mistaken.

deeper symbolic or mythological framework.⁵ Witnesses seldom claim to have witnessed “little green men” flying in the sky. Instead, observers are often dumbstruck by their experience. They know they saw *something*. They can describe, in general terms, the object’s appearance and behaviour. But they are often at a loss to imagine what the object could possibly have been.

Enough about delusions. What about the conspiracy account? According to this view, various political or military insiders have conspired to mislead the public for some unknown purpose. This explanation has not yet been explored. The idea would be that the pilot’s reports, radar data, and infrared footage have all been manufactured. They are deliberately misleading. The conspiracy approach is attractive since it does away with any suggestion of miracles and it carries a decent inductive track record (the US government has conspired to mislead the public before, of course, and especially with regards to issues of national security and the acquisition of advanced foreign technology⁶). But there are several reasons to doubt this hypothesis. Miraculous UFO phenomena have been documented and corroborated by many other nations besides the USA, so the sheer size of such a conspiracy would make it difficult to successfully maintain. This would seemingly be a global conspiracy. Moreover, the US government has historically been tight-lipped about its investigations into the phenomena. Only in the last few years has there been anything like official confirmation of the troubling mysteriousness of the phenomena.

It is unclear what benefit would be derived from such a conspiracy to delude the public. And such a theory seems to suggest that a conspiracy has been active to delude the public about the existence of flying saucers since at least as early as 1947, without any prominent intelligence leaks during that time that would be suggestive of such a conspiracy. Additionally, the US Department of Defense has, in the past, commissioned science educators such as J. Allen Hynek, to debunk spooky explana-

⁵ Thanks to an anonymous reviewer

⁶ An interesting example is Project Azorian, a US Navy covert operation to raise a Soviet G-II class submarine from the floor of the Pacific Ocean. The largely successful salvage occurred in 1974, six years after the vessel was lost by the Soviets. The cover story given to the public through a series of press releases was that the business magnate Howard Hughes was financing a massive deep sea drilling project in the area. To that end, the 600-foot salvage ship was emblazoned with the Hughes Tool Company logo and fitted with a gigantic dummy drill (Author Excised 1985). The true mission of the vessel, named the *Hughes Glomar Explorer*, was finally declassified in 2010.

tions and to promote *naturalistic* explanations of UFOs to the public. Such historical whitewashing seems to be at odds with the new, alleged conspiratorial motives. In sum, although a conspiracy may be able to account for the *explanandum*, there is virtually no evidence supporting the *explanans*.

Lastly, there are veridical explanations, which must invoke disruptions of the regular course of nature. And the trouble with these explanations is obvious. If they are to be successful, the probability that a law of nature has been broken must outweigh the probability that the various tools of observation and measurement have misfired in such a way that they have all converged on the very same output. It is a serious problem for such explanations, making them superlatively difficult to succeed. But even so, the severity of this problem will differ from case to case, and will ultimately boil down to how the evidence sits on either side of the scale.

Our claim is just that it is sometimes the case that the scales are tipped such that *there is* stronger evidence in support of the disruption of a natural law than for the claim that all the (assumed to be reliable) tools of measurement have conspired to mislead us. The bare claim that an observation, if veridical, would go against some law of nature is not sufficient reason to discount the claim. For it is the *very assumption* that *because* the laws which govern the operation of the tools of measurement are generally reliable, *we can therefore infer* that some other particular laws have been broken. In that sense, it is exactly because we affirm that the laws are generally reliable *over here* that we can justify the claim that they may have been broken *over there*.

Paradoxically, our approach is a slice of Ockham's razor. To explain an observation of a UFO that seems to break natural laws, we can either point to *several* malfunctions, which have altogether managed to lead us astray (almost miraculously) in exactly the same way, or we can point to the UFO itself, and accept that it truly exhibits the mystifying and miraculous law-breaking behaviours observed.

Take the lack of any sonic boom recorded by the crew of the aircraft carrier, the pilots, and recording instruments at ground and sea, despite the observation (by multiple pilots, crewmen, radar operators, and infrared cameras) of a large, cigar-shaped (i.e. non-aerodynamic) object travelling at hypersonic speed through the atmosphere, close to sea level. Altogether, we argue that the lack of any audible or measurable sonic boom from this object is not the result of the failure of multiple pilots, crewmen, radar operators, and infrared cameras. Instead, a 12-foot-long

tic-tac travelled at hypersonic speed without making a noise. The ideal gas law was broken. Similar arguments could be made for, say, instantaneous hypersonic acceleration or deceleration etc.

6. Conclusion

Hume's argument against miracles remains popular, well-known, and well-discussed. Indeed, it also seems genuinely *successful*! But the success of the argument comes from its myopic focus on *testimony* as the chief source of evidence for miracle claims. Given the era in which Hume was writing, this is not such a surprise. There were no radars or infrared cameras, no seismographs or audio recorders, nor were there any experienced airplane pilots. And indeed, where Hume's argument is restricted to a discussion of human testimony, the argument is largely successful. After all, eyewitness testimony is famously unreliable (for a good overview, see Memon et al. 2008). Where testimonial evidence is concerned, we see little wrong with Hume's argument.

The trouble comes when law-violations are corroborated by a wide slew of different observational tools, each operating in accordance with different physical principles (Hacking 1983; Chakravartty 2017: §2.2). In such a case, we are backed into a corner, for our hand is virtually *forced*. We must accept a miracle whether we go this way or that. Either we accept that all the different laws underwriting all the observational tools we have been using have led us to an unbelievable conclusion *or* we accept that the observation which they corroborate is indeed miraculous.

For the evidence to be sufficiently strong, a few criteria must be satisfied: The evidence must come from various different observational tools. There must be some degree of repeatability or corroboration between different observational instruments at different times. If our confidence in the reliability of the tools is sufficiently strong, then we are justified in accepting their testimony, even when they go against a deeply held commitment or strongly corroborated belief.

Put another way, Hume's argument holds strong to the claim that there is always sufficient counter evidence to a miracle claim i.e. our confidence in the uniformity of nature. In this paper, we turn that claim around. We say that there is sometimes counter evidence to the claim that nature is uniform i.e. our confidence in the tools with which we investigate the world.

In the Nimitz case, there is good evidence for the claim that the laws of nature were violated; not violated by extraterrestrials or by time

travellers or by God or by the Russians. Indeed, nothing more can be said about the hows and the whys. Explanations just come to a stop. At least, for now.

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