

THE NTSB ANALOGY



-  SAFE
-  INDEPENDENT
-  EVIDENCE-DRIVEN
-  TRANSPARENT
-  ACCOUNTABLE

Why a 'Skeptic Seat' Is the Wrong Architecture for UAP Investigation

Do not balance convictions.
Build a process in which
evidence leads.



GLOBAL CONTEXT
Shared challenge.
Shared standards.



INSTITUTIONAL DESIGN
Independence from policy.
Accountable to the public.



THE NTSB ANALOGY—AND WHY A “SKEPTIC SEAT” IS THE WRONG ARCHITECTURE FOR UAP INVESTIGATION

Fernando Longo

@FernandoFLongo

Jul 15

Executive Summary

This article does not assume that the UAP Science Advisory Council presently possesses statutory investigative authority, subpoena power, custody of government evidence or operational control comparable to the NTSB. The concern is prospective and institutional: if the council is to advise government agencies, influence evidentiary standards or participate in case assessment, its public architecture should reflect the competence, role definition and methodological accountability appropriate to that influence. The analogy between the National Transportation Safety Board and UAP investigation is procedural, not evidentiary. The argument is not that the current public UAP record resembles an aircraft accident investigation supported by recovered wreckage, intact flight recorders, calibrated telemetry and complete operational records. The argument is that any available UAP evidence should be collected, preserved, examined and reported through a comparably disciplined process. The NTSB does not organize investigations around competing beliefs. It constructs teams according to the technical requirements of the occurrence. Specialists are assigned defined areas of responsibility, external participants are admitted because they possess relevant expertise, and the final analysis remains under the authority of the investigating body. Skepticism is not assigned to one symbolic representative. It is embedded throughout the process as a professional obligation. The proposed architecture must operate through two evidentiary tracks. Contemporary incidents require rapid notification and prospective preservation before data are overwritten, altered or lost. Legacy cases require archival forensics, provenance analysis, historical reconstruction and explicit recognition of

irrecoverable gaps. The method does not pretend that an old case possesses a chain of custody that never existed. It documents what survived, what changed, what disappeared and what level of conclusion the remaining record can still support. That distinction creates a legitimate concern about the publicly described architecture of the UAP Science Advisory Council. Avi Loeb identified Michael Shermer's contribution as the "study of anomalies" and defended the inclusion of a skeptic or designated devil's advocate. The intention of preventing groupthink is reasonable. The institutional design is not. Skepticism is not a technical specialty. It is a method that every physicist, radar specialist, pilot, statistician, engineer, meteorologist and sensor analyst should apply within the limits of their own competence. Assigning one person the symbolic role of "the skeptic" risks turning that individual into the apparent institutional guardian of rationality, while prosaic explanations acquire a presumption of restraint before the case has even been reconstructed. A more rigorous alternative would use specialist jurisdiction, rotating multidisciplinary red teams, symmetric attempts at falsification, explicit assumptions, documented uncertainty and conclusions no stronger than the evidence. The goal should not be to balance believers and debunkers. It should be to construct a process in which no conviction—extraordinary or prosaic—can substitute for evidence.

Contents

This article is divided into thirteen substantive parts. Part I defines the scope of the NTSB analogy. Part II explains why poor evidence makes methodology more necessary rather than less. Part III examines the investigative architecture of the NTSB. Part IV distinguishes technical participation from the representation of competing belief systems. Part V addresses the structural problem created by a permanent skeptic seat. Part VI defines skepticism as a universal methodological obligation. Part VII proposes multidisciplinary red-teaming as a superior alternative. Part VIII examines Michael Shermer's legitimate areas of contribution and the limits of his publicly documented qualifications. Part IX discusses priors, base rates and case-specific evidence. Part X explains why equal accountability does not imply equal probability. Part XI considers the governance requirements of a credible UAP council. Part XII proposes a more defensible investigative architecture. Part XIII establishes a separate framework for legacy cases, based on archival forensics, provenance, historical reconstruction and conclusions proportionate to the surviving record. The article concludes by identifying the deeper institutional and temporal lesson of the NTSB model.

Part I — The Scope of the NTSB Analogy

I regard the National Transportation Safety Board as one of the world's foremost and most technically capable accident-investigation bodies. Its importance is not limited to investigations conducted inside the United States. Under the framework of ICAO Annex 13, States may participate in international aviation investigations through accredited representatives and technical advisers when their aircraft, operators, manufacturers or other legally recognized interests are involved. The purpose of this framework is not to assemble different ideological positions regarding what may have caused an accident. Its purpose is to ensure that the investigation has access to the States, organizations, records, manufacturers and specialists required to reconstruct the event and prevent its recurrence. The analogy I draw between that system and UAP investigation is procedural, not evidentiary. The analogy does not import the NTSB's statutory mandate, subpoena powers, legal jurisdiction or presumption that the underlying class of event is already known. Nor does it assume that UAP inquiry has the same exclusive objective as accident prevention. What should be borrowed are the institutional virtues: rapid preservation, defined technical jurisdiction, separation of fact from inference, independent final judgment, auditable records and recommendations designed to prevent recurring evidentiary failure. I am not claiming that the existing public UAP record is equivalent to an aviation accident file supported by recovered structures, intact flight recorders, maintenance histories, air-traffic records, calibrated telemetry and preserved operational data. Much of the public material is plainly incomplete, compressed, detached from its original systems or dependent on testimony that was formalized long after the event. The argument is that whatever evidence exists should be governed by the same fundamental discipline that characterizes a serious safety investigation. Native files should be preserved. Provenance and chain of custody should be documented. Witnesses should be interviewed contemporaneously. Radar, telemetry, communications, maintenance data, sensor configurations and environmental records should be retained. Observation should be separated from inference. Specialists should work within defined areas of competence. Uncertainty should be stated explicitly. Dissent should be documented rather than suppressed. Conclusions should never exceed the strength of the underlying evidence. The value of the analogy therefore does not depend on pretending that UAP cases already possess evidence comparable to a major aviation accident. Its value lies in recognizing that the quality of the eventual investigation depends heavily on what institutions do before the evidence deteriorates or disappears.

Part II — Why Poor Evidence Makes Methodology More Necessary

Poor evidence is not an argument against this methodology. It is the reason the methodology is needed. The central failure of UAP investigation is not merely that much of the current evidence is incomplete. The deeper failure is that no reliable standing system has consistently existed to prevent potentially valuable evidence from becoming incomplete in the first place. When an incident is not reported immediately, investigators lose the opportunity to preserve the original evidentiary environment. When digital files are exported, compressed or copied without their native metadata, information concerning time, platform state, sensor settings and processing history may disappear. When radar and tactical-system recordings are subject to routine overwrite policies, potentially relevant tracks may be lost before anyone with investigative authority requests their retention. The same problem applies to maintenance documentation, calibration records, electronic-warfare activity, mission logs, airspace information and meteorological conditions. If these materials are not preserved at the time of the occurrence, later investigators may be forced to reconstruct technical questions from fragments that were never collected for investigative use. Witness evidence also changes with time. Memory is not a flight recorder. Later interviews may still be valuable, particularly when conducted by skilled investigators, but they cannot replace contemporaneous documentation. Repetition, media exposure, discussion with other witnesses and the natural reconstruction of memory can influence how an event is recalled and described. Without predefined notification, preservation and interview procedures, the next important occurrence may again reach investigators as a short, recompressed video accompanied by missing metadata, overwritten radar and recollections collected months or years later. An investigative institution cannot reconstruct evidence that the institution failed to preserve. That is why evidence quality should not be treated as a passive property of the event. Evidence quality is also a product of institutional preparation. A weak record may reflect the intrinsic ambiguity of an occurrence, but it may also reflect a preventable failure to collect and retain the material that could have reduced that ambiguity.

Part III — What the NTSB Model Actually Provides

The NTSB does not merely receive evidence and issue an opinion about what it means. Its investigative architecture is designed to produce an auditable factual record. When a significant occurrence takes place, the agency can deploy a Go Team composed of specialists

selected according to the requirements of that event. An investigator-in-charge coordinates the investigation, while technical groups examine defined subjects such as operations, aircraft structures, powerplants, systems, air-traffic control, weather, human performance, survival factors and recorded data. This division is not arbitrary. It prevents technical questions from being absorbed into a generalized debate among public personalities. Each group develops a factual record within a field in which its members possess relevant knowledge. The investigation is then assembled from those coordinated findings rather than from competing narratives created in advance. The factual phase is separated from the final analytical judgment. Investigators collect documents, interview witnesses, examine systems, recover recorded information and reconstruct the sequence of events. Participating organizations may assist with technical knowledge and factual verification, but they do not control the agency's final conclusions. That separation is crucial. An organization with operational or manufacturing knowledge may contribute information that investigators need, while the investigating authority retains responsibility for weighing that information independently. Expertise is admitted without surrendering analytical control. The NTSB also places significant factual material in public dockets and issues safety recommendations designed to prevent similar failures from recurring. The investigation therefore does more than classify a past event. It identifies weaknesses in systems, regulations, procedures, training, design or information retention and proposes corrective measures. Applied to UAP inquiry, this principle would require institutions to ask not only what a particular incident may have represented, but also why potentially decisive evidence was unavailable. If a radar recording was overwritten, the process should examine the retention policy. If native video was not preserved, the process should examine the export and storage procedures. If witnesses lacked a trusted reporting channel, the process should examine stigma and institutional culture. If classification prevented technical review, the process should examine whether appropriately cleared multidisciplinary teams could have obtained controlled access. The objective is not merely to label yesterday's case. It is to prevent tomorrow's case from suffering the same evidentiary failure.

Part IV — Expertise, Not Competing Belief Systems

The NTSB does not organize investigations by assembling representatives of opposing convictions. It does not appoint one participant who believes that an aircraft suffered a mechanical failure and another whose institutional function is to remain skeptical of

mechanical failure. It decomposes the event into technical questions and assigns those questions to the appropriate specialists. Operations investigators examine the conduct of the flight, relevant procedures, crew actions and the operational environment. Engineers examine aircraft structures, systems and components. Recorder specialists examine recorded information and its limitations. Meteorologists examine environmental conditions. Human-performance specialists examine perception, workload, fatigue, training, communication and decision-making. Each specialist is expected to approach the evidence critically. Each inference remains vulnerable to challenge from the broader process. No person is appointed as the exclusive representative of doubt or rationality. This distinction is essential. The correct institutional question is not which worldview deserves a seat. The correct question is which expertise the event requires. External participation under the NTSB Party System also follows that logic. Organizations participate because they possess employees, records, operational familiarity, manufacturing knowledge or other technical resources that may assist the investigation. Individuals are expected to contribute specialized knowledge within the structure established by the investigating authority. They are not admitted to represent belief camps. A technically credible UAP process should operate in the same manner. It should begin by identifying the questions raised by the occurrence and then selecting specialists capable of addressing those questions. A case involving radar would require radar engineers and operators familiar with the system involved. A case involving EO/IR imagery would require specialists in optics, sensor design, processing pipelines, image artifacts and platform geometry. A case involving reported flight performance would require expertise in flight dynamics, aerodynamics, propulsion, atmospheric physics and range estimation. A case involving witness perception would require aviation human-factors specialists rather than generic speculation about whether witnesses can be mistaken. The inquiry should be built around the event. The event should not be filtered through a preselected cast of symbolic positions.

Part V — The Structural Problem of a Permanent “Skeptic Seat”

By “skeptic seat,” I mean the publicly defended practice of assigning one member to represent the skeptical perspective or to act as a designated devil’s advocate. I am not claiming that this phrase appears in a formal charter or creates a statutory office. It is shorthand for the institutional design publicly described by the council’s chair. Avi Loeb

publicly described Michael Shermer's area as "the study of anomalies" and defended the inclusion of a skeptic or designated devil's advocate as protection against bias, blind spots and groupthink. The intention is understandable. The architecture is not. Skepticism is not a technical specialty that must be embodied by one member. It is a methodological obligation that should apply to every member of the investigation. When one individual is symbolically designated as "the skeptic," that person may acquire an epistemic status that exceeds his actual technical jurisdiction. He becomes the apparent guardian of rationality, while other members may implicitly appear to require correction or restraint. This structure can generate an asymmetry before the evidence has even been examined. Prosaic interpretations may begin to look inherently cautious and scientific, while interpretations outside familiar categories may appear presumptively credulous. The problem is not that ordinary explanations should be ignored. They should normally receive early investigative attention because they are common, often testable and frequently correct. The problem arises when investigative priority is silently converted into presumed identification. A designated devil's advocate is not inherently illegitimate. It may be useful as one temporary decision procedure among several. The structural risk arises when dissent is permanently personified, attached to a public identity, confused with technical expertise or allowed to defend one class of explanations rather than challenge every material hypothesis symmetrically. That is not neutral skepticism. It is a preferred destination presented as a method. A serious council should not create one chair for rationality. Rationality should be a condition of participation for everyone.

Part VI — Skepticism as a Universal Duty of Method

A physicist must be skeptical of the physical model being used. A radar specialist must be skeptical of track association, propagation effects, clutter, false returns and processing artifacts. An EO/IR specialist must be skeptical of apparent shape, apparent rotation, thermal interpretation, autofocus, stabilization and display processing. A pilot must be skeptical of perceptual reconstruction, range estimation and apparent motion. A meteorologist must be skeptical of environmental assumptions. A statistician must be skeptical of sampling, selection effects, priors, dependent observations and inappropriate multiplication of evidence. No member is exempt. The physicist should not treat equations as substitutes for uncertain inputs. The pilot should not treat professional experience as immunity from perceptual limitations. The sensor specialist should not assume that the display necessarily represents

the external object in an intuitive manner. The statistician should not allow a population base rate to replace analysis of the individual case. Skepticism should therefore be embedded in the investigative rules. Assumptions should be disclosed. Alternative hypotheses should be defined. Evidence capable of distinguishing between them should be identified. Attempts at falsification should be documented. Confidence levels should be calibrated to the quality of the available evidence. Under this model, skepticism ceases to be a personality and becomes a procedure. That is where it belongs.

Part VII — Multidisciplinary Red-Teaming as a Better Alternative

The legitimate concern behind a devil's-advocate role is that committees can become overconfident, homogeneous or captured by a shared interpretation. That concern should not be dismissed. It should be addressed through a more rigorous structure. A superior model would use a rotating, multidisciplinary red team. Its task would not be to defend a predetermined prosaic explanation or to represent generic disbelief. Its task would be to attack every material hypothesis symmetrically. The red team would identify hidden assumptions, search for contradictory evidence, propose discriminating tests and determine which findings depend on uncertain inputs. It would examine whether observations regarded as independent were actually produced by a common source of error. It would challenge both extraordinary and ordinary interpretations. If the leading explanation were a balloon, the red team would ask whether the estimated motion, altitude, wind field, thermal signature and track behavior were consistent with that identification. If the hypothesis were a sensor artifact, it would ask which mechanism generated the artifact and whether that mechanism accounted for all relevant systems. If the hypothesis were an advanced propulsion system, it would ask what positive evidence supported that conclusion and what physical signatures should have been observed. Red-teaming is a procedure. It should not be personified. The resulting objections and responses should be written, preserved and included in the final record. That would make dissent auditable rather than theatrical and ensure that every hypothesis faces the same investigative discipline.

Part VIII — Shermer's Legitimate Scope and Its Limits

Michael Shermer is the case study, not the foundation of the argument. If he left the council tomorrow and another public skeptic occupied the same undefined symbolic role, the structural criticism would remain unchanged. Conversely, if his role were precisely defined, limited to demonstrated competence and embedded within a symmetric and auditable process, much of the concern would be resolved. The thesis concerns architecture, not personality. According to his published curriculum vitae, Michael Shermer's academic background includes a B.A. in Psychology/Biology, an M.A. in Experimental Psychology and a Ph.D. in the History of Science. Those are legitimate qualifications. They could support useful contributions concerning cognitive bias, perception, memory, belief formation, group conformity, the historical treatment of extraordinary claims, the sociology of anomalous beliefs and public communication. Those subjects matter. Witnesses can be mistaken. Groups can become overconfident. Investigators can interpret ambiguous evidence in ways that reinforce their expectations. Institutions can develop cultures that reward either credulity or dismissal. Historical experience can reveal recurring patterns in the treatment of anomalies. A council could therefore define a meaningful role for Shermer within those areas. The problem begins when a broad public identity as "the skeptic" expands silently into generic technical authority over aviation, radar, sensors, flight dynamics, propulsion or military operations. Shermer's published qualifications do not, by themselves, establish expertise in aviation accident investigation, operational flying, flight dynamics, radar engineering, electronic warfare, sensor fusion, EO/IR systems, photogrammetry, propulsion, aerodynamics, aviation meteorology or military sensor procedures. This is not an argument that he should be excluded from every form of participation. It is an argument that his function should be defined honestly and limited to his demonstrated competence. Formal credentials are neither necessary nor sufficient for every form of expertise. Relevant competence may also be demonstrated through operational experience, technical training, published analysis, validated methodology or a record of work reviewed by specialists in the field. The issue is therefore not diploma counting. It is whether the competence claimed or implied by a particular advisory function has been demonstrated publicly and whether that function remains within its documented limits. No member must master every discipline; every member must know where his or her technical jurisdiction ends. If his assignment concerns human factors, cognitive bias or the historical and social treatment of anomalous claims, that assignment should be stated publicly. The council should identify the questions he is expected

to answer, the methods he will use and the deliverables he will produce. If his role includes technical judgment over flight performance, radar data, optical systems or aerospace behavior, then the public is entitled to know which specialized qualifications support that authority. A council should not allow reputation as a professional skeptic to operate as an unrestricted technical credential. The concern about undefined technical jurisdiction is not abstract. In the recorded American Alchemy discussion of the Nimitz encounter, Shermer stated: "It cannot have happened. That is physically impossible." A physical calculation may legitimately constrain a reported model. The problem arises when a conditional physical constraint is expanded into a categorical judgment about a complex aviation event involving trained witnesses and reported radar and sensor observations, without the technical role, assumptions and limits of that judgment being clearly defined.

American Alchemy

@AmericanALCHMY

.

Jul 9

"IT NEVER HAPPENED!" Michael Shermer on the Nimitz UFO encounter.

"David Fravor talks about the UAP going from 80,000 feet to sea level like that. How could this possibly be?"

"It rapidly accelerated in front of us and disappeared. Our wingmen, roughly 8,000 feet above us,

Show more

0:00 / 0:50

Avi Loeb's calculation identifies a conflict between the reported kinematics and the atmospheric signatures expected under his assumptions. It does not, by itself, determine which element of the account, measurement, track association or interpretation is incorrect. This is precisely why technical jurisdiction and confidence-calibrated language matter.

Michael Shermer

@michaelshermer

.

Jul 10

Here is the link to

@ProfAviLoeb

paper showing the calculations of why this could not have happened as reported. So either misperceived/measured or new physics needed.

Quote

American Alchemy

@AmericanALCHMY

.

Jul 9

"IT NEVER HAPPENED!" Michael Shermer on the Nimitz UFO encounter.

"David Fravor talks about the UAP going from 80,000 feet to sea level like that. How could this possibly be?"

"It rapidly accelerated in front of us and disappeared. Our wingmen, roughly 8,000 feet above us,

0:00 / 0:50

Shermer subsequently published a link to Avi Loeb's article, describing it as containing "the calculations of why this could not have happened as reported," and then framed the remaining alternatives as "either misperceived/measured or new physics needed." That characterization materially exceeds what Loeb's article establishes. Loeb calculates the atmospheric heating, luminosity and pressure effects that should follow if the reported dimensions, velocity and physical interaction with the surrounding air are accepted under his assumptions. The calculation therefore exposes a conflict within a proposed reconstruction. It does not determine which input, observation, measurement, track association or interpretive assumption is incorrect. More importantly, Loeb does not conclude that the Nimitz case has

been solved. He states that these UAP mysteries require rigorous scientific study and calls for multisensor observations, radar ranging, spectroscopy, triangulation and better data than are presently available in public UAP reports. A demand for better evidence is not a categorical resolution of the event. Shermer's post compresses an underdetermined evidentiary record into two broad categories—error in perception or measurement, or new physics—without identifying which input failed or demonstrating how the available evidence discriminates among the many distinct mechanisms concealed within those labels. But the available public record may also contain uncertainty concerning distance, timing, velocity inference, object association, sensor interpretation and the relationship between separate portions of the event. Loeb's calculation cannot determine which of those elements failed merely by showing that they cannot all be simultaneously correct under the assumed model. This distinction is essential. A calculation may constrain a reconstruction or expose an internal inconsistency within it. It does not, by itself, determine which observation, measurement, association or interpretive premise failed. It does not automatically falsify every observation composing the underlying event record. Presenting the former as though it accomplished the latter is not technical caution. It is an overstatement of the cited source. The episode illustrates the institutional concern developed in this article. When a council member invokes another member's technical work, the obligation is not merely to reproduce its most rhetorically convenient implication. It is to preserve its assumptions, limits, unresolved variables and stated demand for further evidence. That discrepancy was documented contemporaneously in a public response comparing Shermer's characterization with the actual scope of Loeb's article and challenging him to identify the exact passage supporting the broader conclusion he had presented.

<https://x.com/FernandoFLongo/status/2075657735576625361>

The purpose of citing that exchange here is not to import a social-media dispute into the analysis, but to preserve the public chronology: the source was identified, the alleged overstatement was specified, and the evidentiary question was placed directly before the person who made the characterization.

Part IX — Priors, Base Rates and Case-Specific Evidence

The concern is not merely theoretical. Shermer publicly stated that approximately 90 to 95 percent of reported sightings receive ordinary explanations and added: “We begin by assuming the rest have similar such explanations.”

Michael Shermer

@michaelshermer

.

Jul 11

No

@FernandoFLongo

90-95% of all sightings have ordinary terrestrial explanations. We begin by assuming the rest have similar such explanations. If they don't, we continue searching for such explanations before we consider extraordinary terrestrial or extraterrestrial answers.

Show more

Quote

Fernando Longo

@FernandoFLongo

.

Jul 10

Two styles of premature certainty: Shermer labels the unknown “mundane” before data arrive; West magnifies ambiguity until it resembles the explanation he already prefers.

Skepticism is not replacing mystery with familiarity. It is proportioning confidence to evidence.

Satire. That statement describes a prior preference. It does not constitute a finding about any particular unresolved case. Beginning with explanations that have higher prior plausibility is methodologically legitimate. Treating that initial preference as though it already identified the remaining individual cases is not. David Burkett's article directly

challenged this use of base-rate reasoning by distinguishing the prior probability from the likelihood ratio of the case-specific evidence, while also addressing sample selection, survivorship bias and the evaluation of genuinely independent observations. Base rates matter. They inform the probability assigned to competing hypotheses before the evidence of the specific event is examined. Ordinary explanations should usually begin with higher prior plausibility than unprecedented technologies or exotic physical mechanisms. But the prior is only the starting point. Once case-specific evidence enters the analysis, the evaluation must be updated according to how probable that evidence would be under each competing hypothesis. A population rate cannot identify an individual object. It cannot reconstruct a trajectory, explain a sensor record or determine which physical mechanism produced an observation.

Michael Shermer

@michaelshermer

.

Jul 14

Mr. Burkett, I'm not sure why you tossed into this otherwise good article that anyone who thinks sex is binary is transphobic. You cited Dawkins, but me and nearly every scientist on the planet and in history uses the accepted definition of biological sex by gamete type (sperm or

Show more

From liesabove.com

Shermer's initial response did not address those statistical arguments. Instead, it focused on a separate paragraph near the article's conclusion concerning the organized skeptical movement and allegations of transphobia. Whatever one's view of that unrelated controversy, it does not alter the article's treatment of priors, likelihood ratios, selection effects or sensor evidence.

<https://x.com/michaelshermer/status/2077101142086230042>

Shermer subsequently opened a new post about the same article and approvingly quoted the passage distinguishing rarity from the ability of particular instruments to separate a real object from a glitch. That concession is important because it accepts the central distinction under discussion: the base rate informs the prior, while the diagnostic weight of the evidence must be evaluated separately.

<https://x.com/michaelshermer/status/2077099116237299830>

Michael Shermer

@michaelshermer

.

Jul 14

Interesting article but title doesn't match content.

"The Base Rate Doesn't Mean What Shermer Thinks It Means"

Author David Burkett then provides several examples of where I applied "base-rate neglect" precisely in my convo with

@AlchemyAmerican

Example with which I agree:

Show more

From liesabove.com

The remaining dispute is therefore not whether base rates matter. They do. It is whether they are being used as a legitimate starting point or allowed to become the investigative destination before the case-specific evidence has been adequately tested. The base rate informs the prior. It does not dictate the diagnostic force of the case-specific evidence.

<https://x.com/FernandoFLongo/status/2077109249612853628>

<https://x.com/FernandoFLongo/status/2077189361481699557>

The problem is not beginning with ordinary explanations. The problem is allowing the prior to become the investigative destination. If investigators continue searching only inside the preferred category, reinterpret contradictory evidence to preserve it and require less support for ordinary hypotheses than for their competitors, the prior has ceased to guide the investigation. It has replaced it.

Fernado Longo

@FernandoFLongo

.

Jul 14

Replying to

@michaelshermer

and

@AlchemyAmerican

@michaelshermer

, this new post does not answer the challenge in the original thread. It resets the thread while leaving the questions unanswered.

More importantly, by quoting that passage approvingly, you have now conceded the article's central distinction: the base rate sets

Show more

Quote

Fernando Longo

@FernandoFLongo

.

Jul 14

Replying to @michaelshermer

@michaelshermer, your response does not rebut the article. It changes the subject.

First, David Burkett did not write that “anyone who thinks sex is binary is transphobic.” His actual sentence says that he stopped following the organized skeptic movement after observing what he

Part X — Equal Accountability Does Not Mean Equal Probability

A rigorous framework does not require that “alien technology” and “balloon” begin with equal probability. They should not. Prior plausibility matters. Established phenomena, known technologies and common sources of misidentification should normally receive priority because they are more frequent and often easier to test. But priority is not identification. A familiar label does not become a conclusion merely because it sounds ordinary. “Balloon,” “bird,” “parallax,” “sensor artifact,” “plasma” and “classified platform” remain hypotheses until the proposed object or mechanism has been shown to account for the relevant evidence. Each hypothesis must identify its assumptions. It must explain the observations of the particular event. It must account for contradictory information. It must disclose uncertainty. It must survive attempts at falsification. An extraordinary hypothesis unsupported by positive evidence should be rejected. A prosaic hypothesis unsupported by reconstruction should remain a hypothesis. The purpose of methodological symmetry is not to pretend that all explanations are equally likely. It is to ensure that all explanations are equally accountable to the evidence required to sustain them. Prior plausibility determines where an investigation sensibly begins. The evidentiary record determines where it is permitted to end.

Part XI — Governance Requirements for a Credible UAP Council

The NTSB analogy also exposes a broader governance problem. A credible UAP council should publish a clear charter defining its mission, authority, relationship with government agencies and access to data. It should identify the precise role of each member and the competencies required for each working group. The council should state how cases are selected, how evidence is preserved, how classified information is reviewed and how conflicts of interest are managed. It should establish rules for recusal when a member has publicly prejudged a witness, case or category of evidence that later comes before the council. The council should also establish a dedicated Legacy Case Review Group, composed not merely of UAP commentators but of archivists, historians of technology, records-management specialists, intelligence historians, aviation researchers, document examiners and the technical experts required by each case. Its role should be to reconstruct the provenance and historical context of the record before any attempt is made to identify the reported phenomenon. Its evidentiary standards should be explicit. The council should distinguish raw data from processed material, direct observation from witness interpretation, and analytical findings from speculative possibilities. Its procedures for documenting dissent should also be public. Minority conclusions should not disappear merely because the majority prefers another interpretation. At the same time, dissent should be supported by defined assumptions, evidence and technical reasoning rather than by generalized objections. The final form of the council's work should be identified in advance. It should be clear whether the council will issue factual reports, methodological recommendations, case classifications, confidence assessments or policy proposals. Without those safeguards, the council risks becoming a collection of public personalities rather than an investigative system. Transparency does not require disclosing material that would genuinely damage national security. It does require explaining the structure through which the material is evaluated.

Part XII — A More Defensible Investigative Architecture

A serious UAP investigative system should begin with a permanent evidence-preservation protocol rather than a permanent ideological role. The protocol should define notification triggers, retention requirements, native-file preservation, chain-of-custody procedures and minimum metadata standards. It should require contemporaneous collection of sensor settings, platform state, weather, airspace activity, maintenance information and

relevant communications. Cases should then be assigned to multidisciplinary teams according to the systems and questions involved. Human-performance specialists should examine witness perception and decision-making. Radar and electronic-warfare experts should examine track quality, interference and association. EO/IR specialists should examine optics, processing and geometry. Aviation specialists should examine operations and flight performance. Statisticians should examine priors, dependence, selection effects and the diagnostic weight of observations. A separate rotating red team should challenge the leading hypotheses. Its work should be documented and included in the case record. The red team should not be permanently assigned to defend prosaic conclusions. It should attack whichever interpretation appears to be gaining institutional momentum. The process should distinguish factual development from final analysis. Initial reports should document what was preserved, what was unavailable and which limitations prevent stronger conclusions. Final assessments should state confidence levels and identify the assumptions on which each conclusion depends. The system should also produce recommendations. If a case cannot be resolved because radar was overwritten, the recommendation should address radar retention. If metadata was lost during export, the recommendation should address native-file handling. If witnesses delayed reporting because of stigma, the recommendation should address reporting culture and protection. The objective should be cumulative institutional learning. Even an unresolved case can produce a valuable result if it reveals how the next case can be investigated more effectively.

Part XIII — Legacy Cases: Retrospective Investigation Without Retroactive Certainty

A credible UAP investigative architecture must recognize that contemporary incidents and legacy cases exist under fundamentally different evidentiary conditions. A newly reported occurrence may allow investigators to preserve native files, radar records, sensor settings, communications, platform information, maintenance documentation, weather data and contemporaneous witness testimony. A historical case may survive only through copied documents, newspaper reports, institutional correspondence, derivative imagery, later interviews and records whose custodial history is uncertain or incomplete. The same principles of rigor remain applicable to both categories, but they cannot be applied as though the available evidence were equivalent. For contemporary incidents, the primary institutional duty is prospective: evidence must be collected and preserved before it is

overwritten, altered, separated from its metadata or lost. For legacy cases, the task is retrospective: investigators must determine what survived, where it came from, how it was transmitted, what may have changed and what level of conclusion the remaining record can still support. A retrospective inquiry should not begin by asking what the reported object was. It should begin by establishing what each surviving evidentiary item actually is. Investigators must determine whether a document is an original record, an official duplicate, a later transcription, a press reproduction, a privately retained copy or a derivative assembled from unknown sources. They should identify, where possible, the document's creator, date, institutional origin, custodial history, reproduction history and any known editing, translation, compression or alteration. A break in provenance does not automatically make a record worthless. It does, however, affect the weight that can reasonably be assigned to it. An incomplete chain of custody cannot be repaired through confidence, repetition or the reputation of the person presenting the material. The break itself must become part of the factual record. A scientifically responsible investigation should state not only what a document appears to show, but also what is known and unknown about how that document reached the present. Historical evidence must also remain separated by category. A contemporaneous official memorandum, an original meteorological report, a first-generation photograph and an interview conducted forty years later may all contribute to the investigation, but they are not evidentially interchangeable. Records created during the occurrence should be distinguished from documents produced during the original inquiry, later official summaries, contemporary press accounts, privately preserved material and retrospective testimony. This distinction does not require the dismissal of delayed witness accounts. Later testimony can identify overlooked documents, locations, participants and investigative leads. It may preserve experiences that were never formally reported because of stigma, institutional pressure or fear of professional consequences. Nevertheless, retrospective memory must be identified as retrospective memory. It should not silently acquire the status of a contemporaneous sensor record merely because it is vivid, sincere or repeatedly cited. The proper method is not to exclude weaker evidence. It is to prevent weaker evidence from acquiring the apparent authority of stronger evidence through repetition or narrative prominence. Legacy cases must also be reconstructed within the technological, operational and cultural conditions of their own period. Investigators should examine the aircraft, balloons, missiles, radar systems, optical equipment, atmospheric knowledge, astronomical conditions, military exercises, classified programs, reporting practices and terminology available at the time of the occurrence. This historical

reconstruction protects the inquiry from two opposite errors. The first is presentism: interpreting an old report as though witnesses and instruments possessed modern resolution, modern terminology and modern conceptual categories. The second is retrospective normalization: attaching a familiar contemporary label to a historical event without demonstrating that the proposed object, technology or mechanism existed in the relevant place and period or actually fits the surviving evidence. Historical context can constrain hypotheses. It cannot substitute for case-specific reconstruction. Investigators must also be careful when reasoning from missing records. In a modern incident, the absence of an expected recording may sometimes support a technical inference when investigators know that the relevant system was functioning, that the record should have been created and that preservation procedures were followed. In a legacy case, those conditions may be unknown. The fact that a radar record, photograph, memorandum or official report cannot now be located does not necessarily establish that it never existed. It may never have been created. It may have been destroyed under ordinary retention schedules. It may remain classified, have been misfiled, transferred during institutional reorganization or separated from the case through undocumented archival practices. The evidentiary significance of an absent record therefore depends on whether investigators can establish that the relevant organization ordinarily created and retained that category of record at the relevant time. Without that institutional context, absence may indicate nothing more than an incomplete archive. A mature retrospective process must also be permitted to conclude that a case can no longer be resolved. That conclusion is not a failure of the method. It may be the most scientifically defensible result available. A historical case may be positively identified. It may be assessed as probably explained by a conventional source. It may remain unresolved because more than one hypothesis fits the surviving evidence. It may also be considered historically unresolvable because the material required to discriminate among competing explanations no longer exists. Those outcomes must not be confused. "Unresolved" does not mean extraordinary. "Historically unresolvable" does not mean meaningless. A case that can no longer identify the reported object may still reveal important failures involving reporting procedures, evidence preservation, archival access, classification, witness treatment or institutional accountability. A legacy investigation can therefore produce an epistemically limited but institutionally valuable conclusion. It may not determine what the object was, yet still establish why the surviving record cannot answer that question and what procedures should prevent the same failure from recurring. Every retrospective reassessment should be versioned and auditable. The investigation should identify the evidentiary record available at

the time of review, the assumptions used, the sources excluded or assigned reduced weight, the uncertainties that remained and the new information that justified any change in classification. A later investigator should be able to understand not only the conclusion, but the route by which that conclusion was reached. If a case previously described as unexplained is later assessed as probably conventional, the record should identify the evidence and reasoning that produced the change. If a previous conventional explanation is weakened or abandoned, the reasons should be equally visible. This requirement is particularly important because legacy cases are repeatedly reinterpreted as new documents emerge, archives open, witnesses come forward or technological knowledge improves. Without a versioned evidentiary history, each reassessment risks becoming another isolated narrative rather than part of a cumulative investigative record. The purpose of legacy review should also extend beyond issuing dramatic verdicts on culturally famous cases. Historical prominence is not equivalent to evidentiary quality. Some cases survive because they possess unusually strong documentation. Others survive because they contain compelling narratives, charismatic advocates, repeated media exposure or institutional mystery. A disciplined program should therefore establish transparent criteria for selecting cases for review. It should consider the existence of potentially authentic records, identifiable institutional sources, preserved imagery, technical documentation, contemporaneous witnesses and opportunities for meaningful reanalysis. Fame may justify public interest, but it should not substitute for investigative value. A historical program can also search archives for overlooked material, authenticate or disauthenticate circulating documents, reconstruct the original institutional response, compare reporting patterns across decades and identify recurring failures in preservation and access. Even where object identification remains impossible, the review can improve the historical database and clarify which claims rest on original evidence and which rest primarily on later retelling. The full investigative architecture should therefore operate through two coordinated evidentiary tracks. The contemporary track should be designed to prevent loss. Its emphasis should be immediate notification, native-file retention, chain of custody, contemporaneous interviews, technical preservation and access to relevant operational records. The legacy track should be designed to map what remains. Its emphasis should be provenance, archival forensics, historical reconstruction, source classification, explicit documentation of evidentiary gaps and determination of the maximum conclusion that the surviving record permits. The first track seeks to prevent uncertainty from being unnecessarily created. The second seeks to describe inherited uncertainty honestly. Neither track promises that every case will be solved. Both

require that conclusions remain proportionate to the evidence. This distinction answers a central criticism of the NTSB analogy. The analogy does not require investigators to pretend that a seventy-year-old UAP report can be transformed into a freshly preserved accident scene. It requires the same institutional virtues to be applied in a manner appropriate to the evidence that actually exists: disciplined documentation, specialist analysis, preservation of provenance, separation of fact from inference, auditable reasoning and transparent limits. The method cannot recreate missing records. It can prevent investigators from hiding the consequences of their absence. A serious UAP architecture must therefore be capable of facing both the next incident and the oldest unresolved file. For the next incident, the duty is immediate: notify, preserve, interview, retain and document before the evidentiary trail deteriorates. For the legacy case, the duty is different but no less rigorous: authenticate the surviving record, reconstruct its provenance, separate contemporaneous evidence from later retelling, restore the historical context, document every break in custody and refuse to claim more than the remaining material can establish. This framework does not manufacture certainty where certainty is no longer available. That restraint is not a weakness. It is the method proving its integrity. A modern UAP institution should not be judged solely by how many famous cases it declares solved. It should be judged by whether its reasoning remains auditable, whether its uncertainty is honestly calibrated and whether it prevents future investigators from inheriting the same evidentiary ruins. The lesson of the NTSB analogy is therefore temporal as well as procedural. The objective is to build a system capable of preserving tomorrow's evidence while examining yesterday's record without manufacturing certainty in either direction. For new cases, preserve the evidence. For legacy cases, preserve the truth about the evidence. Build the inquiry. Audit the record. Let the maximum defensible conclusion—not the preferred narrative—determine where each case is permitted to end.

Conclusion — Build a Process, Not a Symbolic Camp

The real lesson of the NTSB is not merely that investigations should be careful. It is institutional. The NTSB does not manufacture scientific credibility by balancing representatives of competing convictions. It constructs a process in which evidence is preserved, technical questions are assigned to the appropriate specialists, factual development is separated from final judgment, assumptions are exposed and conclusions remain accountable to an auditable record. That is the standard UAP investigation should adopt. The question is not whether Michael Shermer may ask difficult questions. He should. Every member should. The question is whether those questions arise within a technically

structured system in which each participant's authority is limited to demonstrated competence, every assumption is visible and every preferred explanation faces the same evidentiary burden imposed on competing claims. That is not hostility toward skepticism. It is skepticism applied to the skeptic's role. A council does not become rigorous because it appoints one public personality as the symbolic representative of doubt. It becomes rigorous when every physicist, engineer, pilot, radar specialist, sensor analyst, statistician, historian and human-factors expert is required to challenge their own assumptions, remain within their technical jurisdiction and expose their conclusions to falsification. The same architecture must operate across time. Contemporary cases require immediate notification and preservation before evidence is overwritten, altered or lost. Legacy cases require archival forensics, provenance analysis, historical reconstruction and explicit recognition of what can no longer be recovered. The methods differ because the evidentiary conditions differ, but the governing obligation is the same: no conclusion may exceed the record that supports it. UAP investigation does not need professional believers and professional debunkers occupying symbolic opposing camps. It needs original data, rapid preservation, appropriate specialists, defined responsibilities, versioned records, auditable methods, symmetric scrutiny and confidence-calibrated conclusions. A rotating multidisciplinary red team can challenge groupthink. A transparent charter can define authority. Specialist groups can reconstruct events. A dedicated legacy-review group can distinguish original evidence from derivative retelling. Public factual records can establish accountability. Institutional recommendations can prevent the same evidentiary failures from recurring. A symbolic skeptic seat cannot substitute for any of those things. The governing principle should therefore be clear: Do not balance convictions. Do not appoint a personality to represent rationality. Build a process in which every participant is skeptical, every specialty has defined jurisdiction, every inference is auditable and no conclusion—extraordinary or prosaic—can substitute familiarity, reputation or rhetoric for evidence. That is the standard a serious UAP council should meet. Until its structure makes that standard visible, the council risks reproducing the very failure it was created to overcome: incomplete evidence, undefined authority and conclusions hardened before the investigation has earned them. The choice is not between belief and skepticism. It is between personality-driven debate and institutionalized inquiry. The objection is not that Shermer lacks the right to participate, dissent or ask difficult questions. It is that no advisory architecture should allow a public identity as “the skeptic” to function as undefined technical authority. Define the role, demonstrate the competence, document the method and apply the same burden to every hypothesis. If those conditions are met,

skepticism strengthens the process. If they are not, it becomes a substitute for it. For new cases, preserve the evidence. For legacy cases, preserve the truth about the evidence. Build the inquiry, audit the record and let the maximum defensible conclusion decide where each case is permitted to end.

References and Public Record

I. Institutional and Investigative Framework

International Civil Aviation Organization. “Annex 13—Aircraft Accident and Incident Investigation.”

https://www.icao.int/sites/default/files/postalhistory/annex_13_aircraft_accident_and_incident_investigation.htm

National Transportation Safety Board. “The Investigative Process.”

<https://www.nts.gov/investigations/process/Pages/default.aspx>

National Transportation Safety Board. “The Go Team.”

<https://www.nts.gov/investigations/process/Pages/goteam.aspx>

National Transportation Safety Board. “The Party System.”

<https://www.nts.gov/investigations/process/Pages/partysystem.aspx>

National Transportation Safety Board. “NTSB’s Role in Foreign Aviation Investigations.”

<https://www.nts.gov/about/organization/AS/Pages/NTSB%E2%80%99s-Role-in-Foreign-Aviation-Investigations.aspx>

II. UAP Science Advisory Council and Member Qualifications

Loeb, Avi. “More Details on the UAP Science Advisory Council.”

Public description of the council, its advisory purpose, Michael Shermer’s assigned area as “the study of anomalies,” and the proposed inclusion of a skeptical perspective or designated devil’s advocate.

<https://avi-loeb.medium.com/more-details-on-the-uap-science-advisory-council-825bd250d23c>

Shermer, Michael. Official Biography.

<https://michaelshermer.com/bio/>

Shermer, Michael. Curriculum Vitae. Primary source for his B.A. in Psychology/Biology, M.A. in Experimental Psychology and Ph.D. in the History of Science.

<https://michaelshermer.com/downloads/Shermer-CV.pdf>

III. Nimitz Encounter, Physical Constraints and Source Characterization

American Alchemy. Recorded excerpt containing Michael Shermer's categorical statements concerning the Nimitz encounter, including "It cannot have happened" and "That is physically impossible."

<https://x.com/AmericanALCHMY/status/2075333099693486517>

Loeb, Avi. "On Mysterious Orbs and Fireballs."

Primary source for Loeb's physical calculations, their assumptions and his stated call for rigorous scientific study, multisensor observations, radar ranging, spectroscopy, triangulation and better public data.

<https://avi-loeb.medium.com/on-mysterious-orbs-and-fireballs-4563eecd282a>

Shermer, Michael. Public post characterizing Loeb's article as presenting calculations showing why the Nimitz event "could not have happened as reported," followed by the alternatives "either misperceived/measured or new physics needed."

<https://x.com/michaelshermer/status/2075637462957981828>

Shermer, Michael. Subsequent public formulation concerning whether the Nimitz event could have occurred as reported and the interpretation of Loeb's calculation.

<https://x.com/michaelshermer/status/2075647380083601569>

IV. Base Rates, Priors and Case-Specific Evidence

Burkett, David. "The Base Rate Doesn't Mean What Shermer Thinks It Means."

Analysis of prior probabilities, likelihood ratios, signal-detection theory, selected samples, survivorship bias and multisensor evidence in UAP assessment.
<https://liesabove.com/articles/the-base-rate-doesnt-mean-what-shermer-thinks-it-means/#UAP>

Shermer, Michael. Public statement that approximately 90–95 percent of sightings have ordinary terrestrial explanations and that unresolved cases should initially be assumed to have similar explanations.

<https://x.com/michaelshermer/status/2075972231570854227>

Shermer, Michael. Response to Burkett’s article focusing on a separate passage concerning the skeptical movement, biological sex and allegations of transphobia, rather than addressing the article’s statistical argument.

<https://x.com/michaelshermer/status/2077101142086230042>

Shermer, Michael. New post concerning Burkett’s article, approvingly quoting the distinction between rarity and the ability of instruments to distinguish a real object from a glitch.

<https://x.com/michaelshermer/status/2077099116237299830>

V. Shermer’s Published UAP Methodology

Shermer, Michael. “Why UAPs Are Now a National Conversation.”

Relevant to Shermer’s treatment of ordinary and extraordinary explanations, his acknowledgment of unresolved anomalies, his use of probabilistic language for prosaic hypotheses and his assessment of Mick West’s proposed explanations.

<https://www.skeptic.com/article/why-uaps-now-national-conversation/>

VI. Author’s Documented Responses — Nimitz and Avi Loeb

The following posts document the chronology of the public exchange concerning Shermer’s recorded statements, his characterization of Avi Loeb’s article, the conditional scope of Loeb’s calculation and the challenges issued regarding the conclusions actually contained in the source. Longo, Fernando F. Public response concerning Shermer’s recorded statements and the use of another scientist’s technical authority to support a categorical conclusion.

<https://x.com/FernandoFLongo/status/2075635832111628748>

Longo, Fernando F. Analysis distinguishing a conditional physical constraint from a total verdict on the Nimitz encounter.

<https://x.com/FernandoFLongo/status/2075647074666680552>

Longo, Fernando F. Contemporaneous response comparing Shermer's characterization of Loeb's article with the article's actual assumptions, scope and conclusion, including a challenge to identify the exact supporting passage.

<https://x.com/FernandoFLongo/status/2075657735576625361>

Longo, Fernando F. Analysis of the methodological asymmetry between tentative prosaic explanations and categorical dismissal of disputed observations.

<https://x.com/FernandoFLongo/status/2075675603035152782>

Longo, Fernando F. Public challenge concerning the exact conclusions contained in Avi Loeb's article and whether it declares the Nimitz case solved.

<https://x.com/FernandoFLongo/status/2075774820482982180>

Longo, Fernando F. Further documentary response concerning Shermer's statements, qualifications, technical jurisdiction and evidentiary claims.

<https://x.com/FernandoFLongo/status/2076077137715491101>

VII. Author's Documented Responses — Accusations and Institutional Accountability

Longo, Fernando F. Public record concerning Shermer's accusations of "quote mining" and "offense archaeology," the context and links supplied in response, and the challenge to identify the allegedly omitted material.

<https://x.com/FernandoFLongo/status/2076489993959129423>

Longo, Fernando F. Institutional criticism concerning Shermer's role, evidentiary accountability, undefined technical authority and the requirements of a credible UAP advisory process.

<https://x.com/FernandoFLongo/status/2076790003712323705>

VIII. Author's Documented Responses — Base Rates and Thread Reframing

Longo, Fernando F. Detailed public response addressing Burkett's statistical argument, including priors, Bayesian updating, likelihood ratios, signal-detection theory, survivorship bias, selected samples and independent sensor evidence; also addresses Shermer's diversion to an unrelated paragraph.

<https://x.com/FernandoFLongo/status/2077109249612853628>

Longo, Fernando F. Follow-up documenting Shermer's new post about the same article, his acceptance of the distinction between rarity and instrument performance, and the continued absence of answers to the original statistical questions.

<https://x.com/FernandoFLongo/status/2077189361481699557>