REPORTED PHENOMENA, UNEXPLAINABLE PHENOMENA:

AN EPISTEMOLOGY OF UAP

Jeremy Butman

ABSTRACT: This paper analyzes the U.S. Navy's report that an unidentified aerial phenomenon was observed by pilots dispatched from the Nimitz aircraft carrier in 2004, a report published by the *New York Times* in 2017. I argue that an unidentified phenomenon is an unexplainable phenomenon, meaning one with unknown causality. In this case, unknown causality involves the apparent negation of gravity. Exploring how a phenomenon might appear within spacetime yet simultaneously appear independent of the causality of spacetime, I review the concept of causation as it is developed by Descartes and Kant, highlighting their contemplation of beings that might exist outside spatiotemporal causation. Using concepts from quantum mechanics and information theory, I explore various ways such a being might be compatible with mathematics and logic. Finally, I consider what conclusions might be drawn if one embraces the phenomenon simply as an appearance of the unexplainable. I observe that any understanding of the phenomenon is possible only on the condition one elects to entertain a report of it. This opens avenues for analysis of reportative speech and belief. Finally, I consider the implications of a determinate experience of a being with no apparent causality for historiography and theology.

KEYWORDS: UAP; Spacetime; Causality; Epistemology; Belief

In May of 2022, the Deputy Director of Naval Intelligence, standing beside the Under Secretary of Defense for Intelligence and Security, presented to U.S. congresspeople what he said was evidence of "unidentified aerial phenomena."[1]

[1] Julian E. Barnes, "At House Hearing, Videos of Unexplained Aerial Sightings and a Push for Answers," *New York Times*, May 17, 2022, https://www.nytimes.com/2022/05/17/us/politics/congress-ufo-hearing.html. See also "Preliminary Assessment: Unidentified Aerial Phenomena," Office of the Director of National Intelligence, accessed June 55, 2021,

In 2017, the *New York Times* reported that the Department of Defense allocated $22 million for a program to investigate these unidentified aerial phenomena, and released two videos of aerial bodies the Department of Defense said were unidentified.[2] In both cases, physical evidence, in the form of video, was accompanied by narrative accounts. The newspaper reported that two Navy pilots, flying off an aircraft carrier called the Nimitz, attempted to intercept what they observed to be an unidentified flying object. The aerial body they describe, in that report and elsewhere, moved in ways that seem to defy fundamental principles of physics, such as the laws of gravity.

What are we to make of these reports specifically, or reports of unidentified phenomena in general? What beliefs ought we to have with respect to them? This paper will consider the content of one of these reports, as well as the structure of our belief in reportative language generally.

It will be best to start with a generic skeptical empiricism, accepting only that which is demonstrated, but one that is also willing to entertain anything so long as it is demonstrated. An investigation into these reports finds itself in a position of Cartesian doubt, and Descartes' perspective, with its naïve directness and strongly exclusive criteria of truth, is an intuitive starting point. This new program of doubt will pass through Kant's transcendental idealism, as well as the concepts of quantum mechanics. No matter how helpful these interpretative lenses may be, they are not the subject of investigation. If the investigation has consequences for transcendental idealism, they can be taken up elsewhere;[3] if physicists see an explanation for the riddle explored here, they might publish it elsewhere, as well.

The first part of the paper will establish the possible nature of unexplainable phenomena in the context of Descartes and Kant, who represent the standard-issue philosophical understanding of the relation between science and consciousness, as well as the human and the natural. The second part of the paper

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https://www.dni.gov/files/ODNI/documents/assessments/Prelimary-Assessment-UAP-20210625.pdf.

[2] Helene Cooper, Ralph Blumenthal, and Leslie Kean, "Glowing Auras and 'Black Money': The Pentagon's Mysterious U.F.O. Program," Dec. 16, 2017, https://www.nytimes.com/2017/12/16/us/politics/pentagon-program-ufo-harry-reid.html.

[3] There is a rich tradition of drawing parallels between transcendental idealism and quantum mechanics, going back to Ernst Cassirer. More recently, Michael Bitbol and Bernard d'Espagnat have in particular explored these intersections. See for instance Michael Bitbol, Pierre Kerszberg, Jean Petitot, eds, *Constituting Objectivity: Transcendental Perspectives on Modern Physics* (Springer: Dordrecht, 2009) and Bernard d'Espagnat, *On Physics and Philosophy* (Princeton University Press: Princeton, 2006).

will look at a hypothetical example of an unexplainable phenomenon in order to submit it to the logics of classical physics and quantum mechanics. The third part will examine the implications of parts 1 and 2 in unison and consider the character of reported phenomena in general, as well as the implications of such phenomena for historiography and theology.

For Descartes, the method of "radical doubt" is employed to address the unreliability of the senses in mundane situations. Adopting a position of radical doubt in the current context has a somewhat opposite purpose. The point is not at all to question sensory knowledge, or the validity of empiricism, but instead the nature of reports of the unexplainable, which function as extreme cases in the logic of reportative speech. What we have radical doubt about is the report of an unidentified phenomenon. Testing such a report will include assessing the feasibility of the content of the claim, as well as analyzing the structure of reportative language in general. By entertaining a singular report of the unexplainable, we can find insights into both the character of the unexplainable and the nature of reportative speech.

1.

Let's begin, then, by applying the broad skepticism of a Cartesian *falsus in uno, falsus in omnibus*, and assert that we will only believe a report if the reporter has never once erred, never once led anyone astray. If the Department of Defense has ever lied, its testimony must be discounted. In 1987, Lieutenant Colonel Oliver North confessed to misleading Congress about his activity during the Iran/Contra operations,[4] so Department of Defense reports must be dismissed. Similarly, if the *New York Times*, or any newspaper, has ever reported a falsehood, their report also must be dismissed. The Chicago Daily Tribune's notorious "Dewey defeats Truman" headline will suffice.[5] Then, anyone who repeats newspaper stories must be dismissed, too—and so on. The high Cartesian standard of truth will allow us to dismiss any report of unidentified phenomena

[4] Raymond Walter Apple, Jr. "Iran-Contra Hearings; North Is Dismissed by Iran Panel with Criticism for Policy of 'Lies'," *New York Times*, July 15, 1987, https://www.nytimes.com/1987/07/15/world/iran-contra-hearings-north-dismissed-iran-panel-with-criticism-for-policy-lies.html

[5] Tim Jones, "Dewey Defeats Truman: The Most Famous Wrong Call in Electoral History," *Chicago Tribune*, October 31, 2020, https://www.chicagotribune.com/featured/sns-dewey-defeats-truman-1942-20201031-5kkw5lpdavejpf4mx5k2pr7trm-story.html

from any source, even if this standard will also mean that we can no longer believe essentially any report at all.

(It is important to know for this study that there are thousands of reports of unidentified flying objects from around the world, going back decades and even centuries, though the vast majority are not attested to by a power like the U.S. Navy. The National UFO Reporting Center, archives reports going back more than two centuries. It registers an entry from 1800 by Thomas Jefferson, who reported in the sixth volume of the *Transactions of the American Philosophical Society* that "[a] phenomenon was seen to pass Baton Rouge on the night of the 5th April 1800… [It] moved so rapidly, passing over the heads of spectators, as to disappear in the North East in about a quarter of a minute. It appeared to be of the size of a large house… It appeared to be about 200 yards above the surface of the earth, wholly luminous but not emitting sparks."[6] If one rejects the reports selected here for whatever reason, there is no shortage of alternatives to study. Moreover, the conclusions this paper reaches through the investigation of one report could likely be added to by investigating other reports more carefully, too.

Having dismissed all reports as unreliable, we are left only with the video evidence; this evidence, however, will require us to return to the dismissed reports for a more detailed analysis. This leaves us with the video evidence. This video released by the Pentagon and the *New York Times*, however, will also count as a kind of report. Video cannot lie, but it can be manipulated and fabricated. The force of the videos depends not on what the video shows but on the accompanying linguistic report that the video is authentic. The plausibility of the entire report, then, may depend on the validity of the video's authentication.

In the case at hand, though, it may not actually matter whether or not the video evidence is fabricated. There are a few points that demonstrate the problems associated even with authenticated video of an unidentified phenomenon.

What is affirmed in the proposition "this video authentically shows an unidentified aerial phenomenon" is nothing about the phenomenon itself but

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[6] William Dunbar and Thomas Jefferson, "Description of a Singular Phenomenon Seen at Baton Rouge, by William Dunbar, Esq. Communicated by Thomas Jefferson, President A. P. S.," *Transactions of the American Philosophical Society* 6 (1809): 25.

instead something about the mental state of the identifier: this phenomenon is unknown to this identifier.

Authenticating the video does not authenticate the inexplicability of the phenomenon videoed. Being unable to identify or explain is often a fact of individual ignorance. When this statement is uttered by the U.S. government, however, it's quite different because the U.S. government has greater means to identify things than any other identifier. This raises a much more formidable ambiguity. This ambiguity is central to the rest of our investigation. The assertion of an "unidentified" aerial phenomenon by the government must be understood in one of two ways.

a) It is an assertion of an *unexplainable* phenomenon. "Unidentified" would mean "unexplainable" because the power to identify is also the power to offer at least a minimally sufficient explanation. "Explanation," minimally, means the identification of a being within the causal fabric of spacetime. This means grasping its origin and how it will interact with other entities. Some things are unidentified or unexplained but generally explainable: it's some kind of bird, it's some kind of drone, it's some kind of adversarial technology. If an Authority[7] like the US government wants an explanation of such an unexplained phenomenon, it will find it, even if it means launching an investigation like the one reported by the *New York Times*. The assertion of an unexplainable phenomenon, then, is not the identification or discovery of a novel, unexplained phenomenon in nature, like a new species or weather effect, which could be at least minimally explained through study. It is the assertion of something that *cannot be identified in the causal fabric of spacetime*. So, on *(a)*, the phenomenon really is *unidentifiable and unexplainable* in this radical sense—whether a consequence of our limited knowledge or limited perceptual capacity or something else. This assertion of inexplicability, though, is unprovable and always dismissible. That's because:

Alternatively, *b)* the assertion is subterfuge by the Authority. Even if the video is authentic, the phenomenon on video may not really be unexplainable in the sense used in (a). In principle, an Authority could create in secret the sort of advanced technology that would be unidentifiable and unexplainable to the

[7] I capitalize "Authority" throughout to refer to any repository of knowledge and power; a specific authority like the US government is an example of an Authority, but an Authority need not be a government or even an institution.

public, and it could deploy the technology and lie about its origins. This Authority would be not unlike Descartes' "evil genius." Why would an Authority create the appearance of unexplainable phenomena? That is a question for a different paper. However, because of possibility *(b),* and the impossibility of deciding between *(a)* and *(b)*, due to both the unknowability of other minds and the theoretical potential of an Authority's power to deceive, the assertion that the video shows something unidentified and unexplainable remains only a report. It is impossible to have indubitable certainty that the video is of an unexplainable aerial phenomenon.

Another reason the video evidence will only reportedly support the narrative has to do with the character of the unexplainable itself. One cannot prove a dispositive such as "it has no cause." Moreover, it's always reasonable, even necessary, for a listener to discount anything that has been impossible in every other experience she's ever had in spacetime (though not in dreams, imagination, or various other states of consciousness). It is more reasonable to attribute a reportedly unexplainable phenomenon to some Authority or other, whether or not the specific Authority can be identified or if there is evidence to make the attribution. "I can't explain it, but I know it must have a mundane explanation." The likeliest Authority at hand will serve as a supplemental sufficient cause for the phenomenon. One need not assume deception on the part of whoever reported the unexplainable phenomenon; it could be only foolishness or incompetence.

We have our answer: there is no indubitable evidence, whether video or report, for unidentified, unexplainable phenomena. Not, at least, according to conventional conceptions of evidence. But let's pause and delve a little deeper into the meaning of the "causal fabric of spacetime," which supposedly countermands such a possibility.

Identity, particularly in scientific definition, is determined through causal mechanisms, such that what something 'is' can be reduced to an *x* such that *x* will always interact with any *y* in *z* way; create enough conditions of this kind and you have a workable classification. The *causal fabric of spacetime* refers to a broader conception of causation, to the web of causalities that fix the character of our world and nature, the principles according to which things unfold at the scales of both geological history and particle interactions: chemical reactivity, genetic

variation, ontological discreetness, the forces of momentum, entropy, and the like.

For Descartes the causal fabric is evinced through memory and consistency of perception, that is, in the 'hanging together' of reality. An appeal to the causal fabric provides the solution to the problem of differentiating dreamlife from waking-life and is the final thought of the *Meditations*. The ultimate test of the continuity of reality hinges on whether "I can connect my perceptions [of current circumstances] with the whole of the rest of my life without a break."[8] A rupture in the consistency of the causal fabric, such as an unexplainable disappearance, is enough to indicate either the existence of the supernatural or a dream-state. "If, while I am awake, anyone were suddenly to appear to me and then disappear immediately, as happens in sleep, so that I could not see where he had come from, or where he had gone to, it would not be unreasonable for me to judge he was a ghost, or a vision created in my brain, rather than a real man."[9] This ambiguity between ghost or "vision of my brain" is the same as the ambiguity between (a) and (b) above, between the authentically unexplainable and the possibility of subterfuge, on the other, a mind.

By suggesting that positing a ghost might not be inherently irrational, Descartes anticipates the Kantian argument that the appearance of reality is a condition of our finite capacities, and that a concealed realm of things-in-themselves lies behind our experiential world. More than once, Descartes leaves the door open to the possibility that the causal hanging together of reality is not a question of the world itself, but rather a matter of its appearance. "Corporeal things exist," he writes. "They may not all exist in a way that exactly corresponds with my sensory grasp of them…. But at least they possess all the properties which I clearly and distinctly understand"[10] The ultimate nature and causality of things does not necessarily rest in their appearance or physicality but in the understanding of them, their intelligibility, and above all, as they are mathematically.[11]

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[8] René Descartes, *Meditations on First Philosophy* [*Med.*], trans. John Cottingham, Robert Stoothoff, Dugald Murdoch (Cambridge: CUP, 1998), 122 (89–90).

[9] Ibid.

[10] Ibid, 116 (80).

[11] "At least [corporeal things] possess all the properties which I clearly and distinctly understand, that is, all those which viewed in general terms, are comprised within the subject matter of pure mathematics" (Descartes, *Med.*, 116 (80).

Descartes' insight is the germ of Kant's distinction between things-in-themselves and appearances, between the intelligible and the empirical. For Kant, the physical world is entirely deterministic, but he, too, leaves open the possibility that something intelligible, beyond our sensory grasp of the world, may interrupt this causal chain. There are two possible sources of such an interruption: human intelligence, which through an act of the free will (in accordance with reason) can exert itself as an autonomous and independent cause within the fabric of spacetime; or, a supernatural "supreme being," a being over and above spacetime, which would also be intelligible.[12]

Kantian ethics rests on the argument that the human being has agency as an intelligible, interruptive cause through the "pure will," which is able act on the basis of rational principles within the world of appearances. These principles do not have their cause in the empirical world of spacetime: they are atemporal but still have efficacy in spacetime. This contradiction, namely being both atemporal and temporal, is smoothed over by the understanding, which (roughly speaking) identifies a supplemental physical explanation for the intelligible cause. In "Solution of the Cosmological Idea of Totality in the Derivation of World Events from their Causes," he writes:

> If…appearances count as nothing more than they in fact are, viz, if they count not as thing in themselves but as mere presentations connected according to empirical laws, then they must themselves still have bases that are not appearances. But such an intelligible cause is not, as regards its causality, determined by appearances, although its effects appear and thus can be determined by other appearances. Hence this cause, along with its causality, is outside the series of empirical conditions where its effects are encounter within the series. Hence the effect can be considered as free with regard to its intelligible cause, and yet with regard to appearance be considered simultaneously as resulting from these according to the necessity of nature.[13]

Anything that does not follow the law of causality within the realm of appearances, that is, anything that has a basis for action outside the chain the causes in the physical world, can only be experienced as occurring within the

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[12] For an analysis of Kant's attitude toward extraterrestrial life see Peter Szendy, *Kant among the Extraterrestrials* (New York: Fordham University Press, 2013).

[13] Immanuel Kant, *Critique of Pure Reason*, trans. Werner S. Pluhar (Hackett: Indianapolis, 1996), 538 (A537/B565).

causal fabric and therefore will be assigned some cause or other by the understanding, which is not concerned with the autonomous causality of the will but only with the necessary causality of nature. This is also how reports of the unexplainable are dismissed—by attributing them to a mundane cause even without evidence.

In the case of a supreme being, however, Kant entertains the idea that an intelligible cause could also appear as itself within the chain of appearance, that is, appear as a break in the causal fabric itself. In "On the Impossibility of the Physicotheological Proof [of God]," deep in the transcendental logic section of *Critique of Pure Reason*, Kant hypothesizes that an appearance, a body, might act within the physical realm in a way that contradicts the laws of causality that govern there. Kant discusses this possibility in the context of a physical proof of the existence of God. "We must inquire whether a *determinate experience*—hence the experience of things of the present world, their character and arrangement—does not perhaps provide a basis of proof that can safely bring us to the conviction of a supreme being"[14] Kant's question is: can the unexplainable appear? Is it conceivable for intelligibility to enter the realm of appearance *as appearance*, and disobey the laws that govern appearances? About the broad possibility he comments, "We are not acquainted with the world in its entire content, much less do we know how to assess its magnitude by comparison with all that is possible"[15] But he goes much further. In contemplating the cosmological ideas that initiate the commentary on the proofs of God, Kant takes up an analysis of the "causality of the cause of what occurs,"[16] that is, the nature and cause of causation itself and particularly whether the causality of causation is free or determined, that is, if what caused the causal fabric is free or constrained. This begins a discussion of the nature of freedom as the "unconditioned," which in the section on the physicotheological proof of God becomes a question of whether any being has the ability to act as the free within appearances. The reason to entertain such a possibility is not simply our ignorance about "all that is possible" but also because the rational structure of causality seems to imply such a being.

> Everywhere we see a chain of effects and causes, of purposes and their means, and

[14] Ibid, 600 (A620/B648).
[15] Ibid, 603 (A623/B651).
[16] Ibid, 535 (A533/B561).

> we see regularity in all arising and passing away. And since nothing has on its own entered the state wherein it is to be found, anything always points further toward another thing as its cause… And thus the entire universe would in this way have to sink into the abyss of nothingness… unless someone assumed something that—outside of this infinite [world of the] contingent—subsists on its own originally and independently."[17]

The only thing that can prevent an infinite regress of causes and effects, sinking the world into an "abyss of nothingness," is the "assumption" of something that acts independently of external causes, that is, something self-caused. "The concept of such a being," Kant continues, "is beneficial to reason's demand for parsimony of principles; it is not subject to any contradictions within itself."[18] The contradictions of causation—that it either creates an infinite regress or demands self-causation, and that self-causation, as Hume pointed out, must be understood as both successive and simultaneous, as a unification and separation of cause and effect—are unexplainable within the order of appearances. The inexplicability of causation in general then lends itself to a rational assumption of a self-caused, wholly autonomous supreme being of some kind. Such a being would not add an inexplicability to the equation, but rather replace one inexplicability with another. He writes, "Since with regard to causality we do require an utmost and highest being, what prevents us from also positing this being, in its degree of perfection, above everything else that is possible?"[19] Although Kant concludes that such a being cannot appear and act freely and hence such a proof of God is impossible, he nevertheless does so cautiously: "This proof deserves always to be mentioned with respect. It is the oldest, clearest, and most commensurate with common human reason."[20] In other words, Kant does not absolutely rule out the possibility of the appearance of the unexplainable.

All this has only been to show certain weaknesses in the traditional conception of the causal fabric of spacetime and to illustrate certain ambiguities and contradictions in our understanding of nature that arise as a consequence of mind and consciousness. Kant's disposition toward the inexplicable is immaterial. Toward this point, then, let's briefly consider two conceptions of causality that

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[17] Ibid, 603 (A622/B650).
[18] Ibid, 603 (A623/B651)
[19] Ibid.
[20] Ibid.

more explicitly question the nature of the chain of causes or the causal fabric. The first is David Lewis' articulation of the idea that our understanding of causality relies on *counterfactuals*.[21] Say I intentionally break a wine glass with a fork.[22] Lewis argues that, for instance, the assertion "striking the glass caused it to break" is less accurate than "had the glass not been struck, it would not have broken." The necessity of the strike to the breaking of the glass is found by denying the antecedent in the conditional, which is done in a hypothetical, counterfactual world. What interests us in this theory is that this counterfactual theory of causation requires a degree of *hypothesis* (which rhymes with Kant's comment that only the "assumption" of a supreme being can explain the causality of causation). I have to imagine an alternative world in which I did not strike the glass in order to understand the necessity of the strike to the breaking. In other papers, Lewis has argued that this kind of causation is somewhat rare, and generally causation is not like a causal chain (described counterfactually), but should be understood instead as "influence,"[23] given the variety of causes that contribute to any effect. Here, too, then, causality becomes less mechanistic and more dependent on the scalar effects of our experience: to us the striking of the glass may seem to be the necessary cause, but it's equally necessary that the glass have certain properties and the fork others, equally necessary for my arm to have strength, etc. In this sense causation appears delocalized, dispersed across physical scales and through an indeterminate spacetime. The localization of causation in a particular, the fork for instance, becomes hypothetical, in the sense of being dependent on experience. Much more could be said elsewhere about David Lewis' discussion of possible worlds.[24]

The second alternative interpretation of causation that may be relevant is information causality. First delineated formally as a physical principle in 2009,[25] information causation shows that in quantum communication, it is possible for

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[21] David Lewis, "Causation," *Journal of Philosophy* 70, no. 17 (1973): 556-567.

[22] This example comes from John David Collins, Ned Hall, L.A. Paul, "Introduction," in John David Collins, Ned Hall, L.A. Paul, eds., *Causation and Counterfactuals* (Cambridge: MIT Press, 2004), 3.

[23] David Lewis, "Causation as Influence," *The Journal of Philosophy* 97, no. 4, Special Issue: Causation (April 2000): 182-197.

[24] See David Lewis, *On the Plurality of Worlds* (Wiley: Hoboken, NJ, 2001).

[25] Marcin Pawłowski, Tomasz Paterek, Dagomir Kaszlikowski, Valerio Scarani, Andreas Winter and Marek Żukowski "Information Causality as a Physical Principle," *Nature* 461 (2009): 1101–1104.

Alice to send an amount of information, *m*, to Bob, and for Bob to receive more than *m* bits of information. The theory is most relevant to the problem of entanglement in quantum mechanics. Imagine Alice and Bob (the conventional names of quantum mechanics[26]) are partners who experimentally entangle two electrons in a lab on Earth, that is, bring two electrons into the same quantum state. Alice then carries one electron to a distant galaxy, while Bob stays behind on Earth with the other. Theoretically, the two electrons will remain entangled despite the spatial difference. Then, when Bob looks at his electron on Earth he will entangle it with himself by interacting with it through observation, and the electron will become disentangled with Alice's electron immediately. Alice's electron's quantum state was acted upon instantaneously by something across the universe. It was this fact that led Einstein to complain of "spooky action at a distance" in quantum mechanics. The problem is that this causality seems to potentially indicate faster-than-light travel. Information causality, however, offers an alternative. It suggests we understand this causality in nonphysical terms, as information transfer. The motivation of the theory may be to rule out superluminal travel, but it does so by illustrating something almost as surprising. In classical communication, the receiver cannot receive more information than the communicator communicates. Information causality, however, suggests that information has certain self-generating properties, whereby one bit of information from the sender unlocks access to subsets of information about the sender to the receiver.

Insofar as counterfactual causation implies the necessity of hypothetical knowledge to explain the function of causality itself, it's possible to draw at least a tentative connection between counterfactual causality and information as a form of causation. A metaphorical example: imagine I discover that my partner is having an affair and I end the relationship. Counterfactually, had I not discovered the affair, I would not have ended the relationship. What has causal power here is not the affair itself but knowledge that the affair has happened. Taking a more concretely biological example, causal information would be found

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[26] "Alice and Bob" are the conventional placeholder names in quantum discussion for this thought experiment; they were first used by Ron Rivest, Adi Shamir, and Leonard Adleman, "A Method for Obtaining Digital Signatures and Public-Key Cryptosystems" *Communications of the ACM* 21, no. 2 (1978): 120-126.

in the "*information* content of the genome—the sequence of bits—and not the chemical nature of the DNA."[27] The chemical character does not determine the sequence, and it is the sequence that organizes phenotypic expression. Information causality is an attempt to reconcile the non-material forces of information and knowledge (constitutive elements of consciousness) with material causation, and often makes use of quantum theories, and their incommensurability with the phenomenal world, to illustrate the incompleteness of our physicalist picture.

Astrobiologist Sara Imari Walker and theoretical physicist Paul C.W. Davies compare the relation of information to matter to the problem of relating consciousness to physicality. Playing off David Chalmer's "hard problem of consciousness"[28]—namely that even given a full map of the physicality of a brain we would not understand the relationship of *experiencing qualia* to that map—Walker and Davies suggest that information causality should be a critical feature in any theory of the origin of life. It indicates a possible manner by which consciousness could arise in tandem with matter. "[T]he hard problem of *life*," they write, "is the problem of how 'information' can affect the world" (my emphasis).[29] Information, they go on, "holds promise for uncovering currently hidden universal principles of biology at any scale of complexity."[30] What makes something animate may be its relationship to information, not its chemical make-up.

What is critical here, for our interests, is that the causality of information would not necessarily be unidirectional or localized. The affair mentioned above does not mechanically or locally cause the breakup, but it creates information that might at any time cause a breakup if it's uncovered by the right mind. To the former point, Walker, Davies and Ellis write: "The concept of causation is not

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[27] Carole Lartigue et al., "Genome Transplantation in Bacteria: Changing One Species to Another," *Science* 317 (2007): 632-37. Cited in Sara Imari Walker, Paul C.W. Davies, George F.R. Ellis, eds. *From Matter to Life* (New York: CUP, 2017), 13.

[28] David Chalmers, "Facing Up to the Problem of Consciousness," *Journal of Consciousness Studies* 2, no. 3 (1995): 200-19. Chalmer's assertion that qualia cannot be accounted for in a physicalist picture of the mind presents a strong argument for the possibility that our conception of material causality is incomplete.

[29] Sara Imari Walker, Paul C.W. Davies, George F.R. Ellis, eds, *From Matter to Life* (New York: CUP, 2017), 21.

[30] Ibid, 22.

well defined in physical science. In the realm of particle physics and quantum field theory it means the absence of superluminal interactions: there is no directionality attached."[31] The simple definition of causality in quantum physics is the realm of being in which faster-than-light travel does not occur. To Walker et al, this is an opportunity for a more robust conception of causality that goes beyond "particle and field interactions" to consider the "realm of abstract bits (or qubits, their quantum counterparts)."[32] Thus, they ask: "Can two causal chains coexist compatibly? Are the twin narratives of material causation and informational causation comfortable bedfellows?"[33] The implication is that the unidirectional causation of the phenomenal world of gravity and mass may, in order to explain the emergence of conscious life, require a non-unidirectional form of informational causation working in unison with the normally described material causal chain.

2.

These meditations on causation affect our approach to the problem of UAP. The most fundamental objection to the weird body[34] described by the Navy and *New York Times* was that appeared to disrupt the causal fabric of spacetime. But as the above illustrates there are various reasons—from the paradoxes of causation and deceptions of appearance to the supplements of informational and counterfactual causation—to want a deeper understanding of causation and the nature of this fabric.

Based on reasonable doubt about the nature of causality, one might choose to entertain the reports of unidentified aerial phenomena without falling into patent absurdity. After all, referring back to our analysis of the reports, it may be just as reasonable, or at least possible, to assume that the Authority is not dissembling and the reports are accurate. Similarly, there is an ambivalence about, on the one hand, the actual existence of the unexplainable, and, on the

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[31] Ibid, p. 4.
[32] Ibid, p. 2
[33] Ibid.
[34] "Weird body" describes the phenomenon in colloquial terms quite accurately, even if it has an awkward cultural valence; "weird" refers not only to the strange and uncanny, that which is over and above nature, but also is connected to non-classical conceptions of physical causality. In old English the Fates were known as "wyrd," meaning they had the ability to control destiny.

other, proof of the unexplainable; it is equally possible to believe or disbelieve in the unexplainable, and not theoretically impossible for the unexplainable to appear. In other words, in this situation, one must choose how to judge the phenomena, must elect whether or not to countenance such a possibility: to hypothesize or entertain it. Nothing prevents us from doing so, just as nothing prevents us from dismissing it.

We've seen that under conditions of incredulity, choosing not to countenance the report, such phenomena are easily denied. Now let's consider the phenomena under conditions of credulity, that is, with a degree of faith, or perhaps what Nietzsche called "will to truth." Let's elect the conditions that favor the existence of these phenomenon in order to develop any further insight into them.

To this end, let's imagine the Pentagon's report as a hypothetical situation:

> Let's imagine that on November 14th, 2004, radar on an aircraft carrier called the Nimitz Carrier Strike Group, traveling in the Pacific Ocean, detected an anomalous aerial event: a body descending from 80,000 feet in the air to sea level in under one second. Navy pilots Commander Dave Fravor and Lieutenant Commander Alexandra Dietrich deployed to intercept this body. In an F/A 18-F Super Hornet (top speed 1,190 mph, or more than fifty times slower than the body caught on radar), they investigated. They observed a body— about the size of a jet, oblong, tubular, entirely smooth and without aerodynamic surfaces—that moved over the surface of the ocean in unpredictable ways. It made sharp 90° turns without losing speed. It had no predictable movement, no predictable trajectory, as if it "almost didn't accelerate but almost jumped from spot to spot." It moved without expelling any exhaust or leaving a signature. The pilots captured the body and some of its movement on video. They then attempted to approach the body, but it disappeared, popping up again on radar a few seconds later some 60 miles away.[35]

Let's assume now that the unidentified phenomenon, the weird body and its movement, really existed, or at least a body was both experienced to move this

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[35] This account was reported by Alexandra Dietrich and David Fravor. Jacquelyn Dinick, "Navy Pilots Recall 'Unsettling' 2004 UAP Sighting," *CBS News*, May 16, 2021, https://www.cbsnews.com/news/navy-ufo-sighting-60-minutes-2021-05-16/; Eli Rosenberg, "Former Navy Pilot Describes UFO Encounter Studied by Secret Pentagon Program," *Washington Post*, December 18, 2017, https://www.washingtonpost.com/news/checkpoint/wp/2017/12/18/former-navy-pilot-describes-encounter-with-ufo-studied-by-secret-pentagon-program/; Kelly McCarthy, "Navy Pilot Recalls Encounter with UFO: 'I Think it Was Not from this World'," *ABC News*, December 18, 2017, https://abcnews.go.com/US/navy-pilot-recalls-encounter-ufo-unlike/story?id=51856514.

way and was videotaped doing so. We believe the pilots. They report three unexplainable phenomena: 1) an apparently navigable flying machine that produces no exhaust or other signature like a sonic boom; 2) an apparent flying machine with no established aerodynamic apparatuses, such as wings or rotors; 3) the body's movement: its extreme speed, that it "jumps from spot to spot" and makes 90° turns without slowing down, that it appeared to "disappear."

Let's begin by admitting the assumption, implied by the pilots, that the body is technological. In the civilian world we are not yet technologically advanced enough to construct the technologies in (1) and (2), but they are not beyond our imagining, or, conceivably, our engineering potential. There are clues as to how to eliminate exhaust and waste or fly without wings or rotors, such as exhaust-heat recovery systems, updated thermoelectric generators, or electromagnetic levitation systems. But how these clues could lead to the creation of craft like these is, at least, not publicly available information. The existence of the flying machine, as limited to cases (1) and (2), points to large, secret technological advancements, but little else. They are somewhat weakly unexplainable; they would be "unexplainable" only because we, the public, and these Navy pilots, are not privy to some information. Although taken against the state of the art it seems highly implausible, it is conceivable that they could be explained by some Authority.

In the case of (3), things are different. Even though one might find a technological solution the most conceivable, the implications of the existence of such a technology will certainly not put an end to the questions; in fact, to propose a technological explanation may only produce greater questions.

What is happening when a body jumps from spot to spot in spacetime and moves from 80,000 feet in the air to sea level in one second? If it makes 90° turns without losing speed? Not only is there no existent technology capable of moving in these ways, but unlike (1) and (2) we can hardly imagine how movement of this kind is possible. As far as the public knows, the movement of this body contradicts the causality of gravitational spacetime. Take a body, x, give it any amount of mass and suppose it is moving at high-speed from point A to point B, then to point C, where B is directly above A on a vertical axis, and C is directly to the right of B on the horizontal. In normal physics, once x travels from A to B, momentum should carry it beyond point B, forcing it to curve back toward point

C. In order to avoid a curvature when turning, i.e. to make a true 90° turn, at the moment it arrives at B, *x* would not move one more point on the vertical axis but immediately begin moving on the horizontal. This would amount to the *negation of momentum*. In turn, this would mean the negation of either mass or velocity in the moving body, as momentum is the product of mass times velocity. Where there is mass and velocity in spacetime there is momentum. Moreover, if this body does not accelerate or decelerate, as it reportedly appears to, the phenomenon would also presumably negate or control gravity, following Einstein's conclusion that gravity and acceleration are the same thing. A body as massive as a jet plane cannot accelerate to such velocity and then decelerate to a state of rest all within a single second. The spatiotemporal body appears not to be affected by gravity within Earth's atmosphere.

Perhaps we deny the body mass. We say that agreeing to trust the report does not include agreeing to trust the accuracy of the reporters' perception, and that what is most likely in this case is some kind of illusion, mistake, or collective hallucination. The reporters cannot have seen what they think they saw. At this juncture we could again dismiss the phenomenon as the product of a secret Authority—some sort of advanced hologram program, say.[36] There is no definitive evidence of this, and the explanation doesn't match the report very well, but in the absence of evidence we could take it on the basis of our expectation of what is possible or probable in nature (which would amount to faith in our sense of the magnitude of being), and end the matter there. We could also dismiss it as an astonishingly concrete collective hallucination by the two pilots, combined with glitching or misinterpretation of the radar and video. We could do this even if psychologists examine the pilots and find no explanation for such a hallucination.[37] A strange and unusual situation, certainly, but then again consciousness is strange, so the economy of strangeness is not upset too badly. Checking back with Descartes, though, we realize that everything but existence itself can be denied if we begin reducing phenomena to mental events. In this

[36] One argument attributes the phenomena to a "nonlinear photonic mechanism" deployed by an extraterrestrial probe, see Daniel M. Gross "Unidentified Aerial Phenomena (UAP): A New Hypothesis toward Their Explanation," *Scientific Journal of Exploration* 27, no. 3 (2013): 415-453.

[37] Research into the psychology of those who report UFOs, particularly abduction cases, has already been undertaken by John Mack, who found no pathology or mental illness to explain the experiences. See John Mack, *Abduction: Human Encounters with Aliens* (New York: Scribner, 1994).

way any perceptual experience can be discounted as potentially illusory.

Without ruling either illusion or hallucination, both these scenarios feel like cheating. What is reported is the experience of a body with mass; what is reported is not something moving that may or may not be a body, but a body with unexplainable movement. To deny the psychological credibility of the reporter or to change the terms of the report is not to accept the report.

Perhaps then, to explain the apparent negation of gravity and still be consistent with the report, we attribute mass and external reality to this body, but instead deny it velocity. In one way, this reflects the report, as the pilots suggest the body "didn't accelerate but almost jumped from spot to spot." On its face, though, this is more absurd than denying it mass, because ultimately the experience of movement is more concrete than the experience of a body. Any body moving in spacetime has velocity. Certainly, if we can't deny it body, we can't deny it velocity.

Yet, what is described in the report gives us some reason to question the character of its velocity. Velocity is measured as displacement over change in time. If any time elapsed during its "jump" from 80,000 feet to sea level (or its sixty-mile jump) the weird body could be said to have velocity. If no time elapsed at all, it would not per se have velocity. (Whether time elapsed is not known.) While flying at sea level, making 90° turns, the body seems to have velocity but not momentum, negating gravity. When it "jumps," however, if it does have velocity, it would seem its velocity also bypasses acceleration—again, negating gravity. Within a gravitational field, acceleration is a condition of a body changing velocity. One might hope to measure some acceleration of the phenomenon through closer measurement. If we could capture it with a high-speed video camera and, frame-by-frame, match points in space to microseconds on an atomic clock we could potentially determine if it accelerates and at what rate. But how would these results be interpreted? Take the case of its one-second trip through 80,000 feet. A body the size of a jet, flying steadily above the clouds, accelerates to a speed above 43,200 miles-per-hour, heading toward the ground, and then decelerates back to cruising speed, all in one second. All without making a sonic boom or emitting exhaust. Measuring acceleration and deceleration in such movement would offer only cold comfort.

There are clues that quantum mechanics might suggest an explanation. In

quantum mechanics, bodies appear to operate beyond the normal rules of classical physics. For instance, an electron is able to "jump" from one energy level to another without apparent causality.[38] Similarly, as in the example of Alice and Bob, quantum entanglement between two electrons is not affected by their proximity, that is, the causal bond is not localized, but as it were dispersed through spacetime. A quantum mechanic might have luck devising a hypothetical explanation for the body using such concepts as "supergravity" or "branes," the latter of which are phenomena with mass and charge that propagate through spacetime, to explain the phenomenon. It's true that many science fiction tropes, such as wormholes, warp-drives, and time travel, are theoretically possible in the quantum world, even if they are inexplicable in the experiential world of general relativity.[39]

Hypothetical quantum technology of this kind may seem unlikely on our historical timeline. Generally speaking, there is no academic consensus on how to interpret quantum mechanics, much less the relation of quantum mechanics to the world of macroscopic experience—particularly the force of gravity. The world we experience is one of decoherence, meaning that the coherence of a quantum state is disturbed by our participation in it. As the wave sine collapses upon observation of an electron, the quantum state becomes decohered. It is the world of decoherence that reflects classical physics, and the world of coherent quantum entities in which such ideas as the many worlds interpretation of quantum mechanics become possible. The unobservability of a quantum coherence, and the lack of understanding of how predictions of particle physics relate to macroscopic phenomena, makes it difficult to believe any Authority could have significantly advanced quantum technology.

Regardless of the academic disagreements about interpretation, though, quantum computing has already made major strides.[40] More startlingly, the Navy filed a series of patents in 2017 that indicate much more dramatic leaps. Among

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[38] Sean Carroll, *Something Deeply Hidden*: *Quantum Worlds and the Emergence of Spacetime* (New York: Dutton, 2019), 52. [*Deeply Hidden*]

[39] See J. Richard Gott, *Time Travel in Einstein's Universe: The Physical Possibilities of Travel Through Time* (New York: Mariner, 2001).

[40] Jack D. Hidary, "A Brief History of Quantum Computing," in *Quantum Computing: An Applied Approach* (New York: Springer, 2021), 15-21.

these patents are designs for a "High Frequency Gravitational Wave Generator"[41] and an "Electromagnetic Field Generator and Method to Generate an Electromagnetic Field,"[42] whose applications according to one Navy document include "advanced field propulsion (space drive)."[43] It also filed a patent for a "Piezoelectricity-driven Room Temperature Superconductor,"[44] which its inventor, Salvatore Pais,[45] describes in the following terms:

> It is a well-known facet of quantum field theory that everything can be described in quantum mechanical terms. The complex interactions between a physical system and its surroundings (environment) disrupt the quantum mechanical nature of a system and render it classical under ordinary observation. This process is known as decoherence. However, it is argued that we can delay decoherence (and possibly even suppress it—namely decouple a physical system from the environmental) by accelerated spin and/or accelerated vibration of electrically charged matter under rapid acceleration transients. This may be the very condition to achieve a state of macroscopic quantum coherence.[46]

The description here is strongly indicative of the kind of phenomenon under investigation. A macroscopic quantum entity that would emerge as a result of suppressing decoherence, that is, suppressing the condition that produces the world as it's experienced and which follows classical physics. In other words, a body that would be decoupled from the causal fabric of the world around it.

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41 Pais, Salvatore. High Frequency Gravitational Wave Generator. 2017. US patent number 10322827B2.

42 Pais, Salvatore. Electromagnetic Field Generator and Method to Generate an Electromagnetic Field. 2015. US Patent number 10135366B2.

43 This quotation comes from Navy documents declassified and released as a result of a Freedom of Information Act request. "High Frequency Wave Generator – Email," US Navy, p. 19, accessed July 4, 2022, https://www.navair.navy.mil/foia/sites/g/files/jejdrs566/files/document/%5Bfilename%5D/2020-010057%20FINAL%20VERSION%20Email.pdf. The full document archive is available: "Document Library," US Navy, accessed July 4, 2022, https://www.navair.navy.mil/foia/documents. The release of the documents is addressed by the Navy: "Statement by the Department of Defense on the Release of Historical Navy Videos," US Navy, accessed July 3, 2022, https://www.defense.gov/News/Releases/Release/Article/2165713/statement-by-the-department-of-defense-on-the-release-of-historical-navy-videos/.

44 Pais, Salvatore. Piezoelectricity-induced High Temperature Superconductor. 2017. US Patent US20190348597A1.

45 Pais is credited as the inventor in the US patents, though in the Navy documents the name of the inventor is redacted.

46 "Piezoelectricity-induced Room Temperature Superconductor – emails," US Navy, p .58, accessed July 4, 2022, https://www.navair.navy.mil/foia/sites/g/files/jejdrs566/files/document/%5Bfilename%5D/2020-010055%20FINAL%20VERSION%20Email.pdf. Found in "Document Library," US Navy, accessed July 4, 2022, https://www.navair.navy.mil/foia/documents.

A patent is certainly not evidence that the Navy, or any Authority, has such technology—nor is any number of patents. Not only is there is no evidence the patented designs work, but the Navy also regularly solicits designs for patents, and in some cases even pays $400 for plausible submissions.[47] Moreover, if it is plausible that an Authority might dissemble about its inability to explain a phenomenon, it might also dissemble about its ability to explain. Nevertheless, the existence of the patents strengthens two claims: 1) quantum mechanics can theoretically accommodate a physical system decoupled from its environment, and 2) a secretive Authority could plausibly possess such technology in our historical timeline. The striking resemblance between the unexplainable phenomenon and the sort of being that may be possible through these Navy patents might suggest the phenomenon under investigation is an unofficial prototype of the Navy designs, or that the patents are themselves prototypes inspired by or derived from observations of such phenomena.

The similarity is strong enough that we might feel confident drawing a conclusion: our weird body has its origin with the US Navy or a similar Authority.[48] Because the report in question occurred in 2004, however, if we want to attribute the phenomenon to Navy technology, we will need to suppose that the Navy possessed such a craft in secret for at least thirteen years. How long might the Navy or a similar Authority have possessed it? If it's conceivable an Authority has had such technology for eighteen years (as of this writing), to test the plausibility of our best explanation, we might project back further in time, applying our supposed explanation to consider reports more anterior to the patents. Could such technology have been in the hands of some Authority in 1989, when one of the more sensational reports of a UFO was recorded?[49] We might also recall the infamous report of the crashed UFO in Roswell, New Mexico, which occurred in 1947. And we've already cited Thomas Jefferson's

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[47] "Navy Inventors Earn Recognition, Royalties from Patents," US Navy, March 4, 2020, https://www.navsea.navy.mil/Media/News/SavedNewsModule/Article/2100736/navy-inventors-earn-recognition-royalties-from-patents/.

[48] We do not have incontrovertible proof of this origin, but we might have enough evidence to suggest a best explanation. For a justification of best explanations in the absence of conclusive evidence, see Gregory W. Dawes, "Belief Is Not the Issue: A Defense of Inference to the Best Explanation," *Ratio* 26, no. 1 (2013): 62-78.

[49] See Budd Hopkins, *Witnessed* (New York: Bloomsbury, 1997).

report of 1800. Going much farther back, Pliny reports that in the first century AD "a spark was seen to fall from a star and to grow as it approached the earth; after it had become as large as the moon, light was diffused all around as if on a cloudy day; then, retreating to the sky, the object changed into a torch."[50] Seneca, Plutarch, Livy, Orosius, and Obsequens all report similarly inexplicable phenomena.[51] Must we then posit the existence of quantum technology in 1st century Rome? Applying our new-found confidence in the existence of such phenomena to other reports, we get an unpleasant taste of what it might mean for quantum technology to be a universal explanation of such experiences. But if we reject this explanation for reports from 1947, 1800, and the ancient world, will there be other causes for unexplainable aerial phenomena? If so, could we say even tentatively whether the Nimitz phenomenon was an example of quantum technology or the "something else" we now posit for the other reports?

The quantum technological explanation can be retained only so long as we posit a nonhuman, or at least non-worldly, origin for it. It might be that the best explanation for a report of an unexplainable phenomenon indicates the existence of an unacknowledged intelligence that has been active on Earth, whether extraterrestrial in origin or a being from a terrestrial "shadow biosphere."[52] Might our best explanation for reports of unexplainable aerial phenomena suggest the existence of alien intelligence on Earth, not just in the 21st century but going back millennia? If we countenance the reports, it might seem so. If we look again at the nature of the Navy patents, though, another possibility, however startling and slight, appears.

Salvatore Pais' "High energy electromagnetic field generator" and another paper cited in the released Navy documents, titled "The Macroscopic Character

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[50] Quoted in Richard Stothers, "Unidentified Flying Objects in Classical Antiquity" *Classical Journal* 103, no. 1 (Oct-Nov. 2007), 86. (Pliny, *Nat.* 2.100).

[51] See Richard Stothers, "Unidentified Flying Objects in Classical Antiquity" *Classical Journal* 103, no. 1 (Oct-Nov. 2007), 79-92.

[52] The "shadow biosphere" is a hypothetical realm of beings on Earth with fundamentally different molecular and chemical foundations from us, which cannot be experienced with human perceptual faculties. Typically, such beings are conceived as microscopic. See Steven Benner, Alonso Ricardo, Matthew A. Carrigan, "Is there a common chemical model for life in the universe?," *Current Opinion in Chemical Biology* 8, no. 6 (2004): 672-89. The possibility that this explains the body is tantalizing, but similar to the objection about perception, it seems to contradict the report: the pilots report a body in our world, not one that belongs to a shadow realm. Still, this possibility is worth further investigation.

of Composite High Temperature Superconducting Wires,"[53] are both concerned with the quantum theory of time-reversal-symmetry. Time-reversal symmetry, or simply T-symmetry, theorizes that our asymmetrical experience of temporality, namely that it is unidirectional, is a function of finite perceptual capacity, not an inherent feature of temporality itself. In this theory, time goes forward and, following a mirror causality, also backward.[54] The model of T-symmetry that first appeared in the 1960s has been developed in numerous ways, including by Mark J. Ablowitz and Ziad H. Musslimani, who have introduced "new reverse space-time and reverse time nonlocal and nonlinear integrable equations."[55] How these mathematical equations might factor into our consideration of the weird body must be left to a quantum mechanic. But the thrust of T-symmetry should be borne in mind. Particularly because among the papers published by Salvatore Pais, in the years immediately leading up to filing his patent, is one titled "Conditional Possibility of Spacecraft Propulsion at Superluminal Speeds," about which possibility he writes:

> under certain physical conditions, the singularity expressed by the relativistic stretch factor 'gamma' as the spacecraft's speed (v) as it approaches the speed of light (c), is no longer present in the physical picture. This involves the instantaneous removal of energy-mass from the system (spacecraft) when the spacecraft's speed reaches v=c/2. The original concept at hand does not violate the Special Theory of Relativity but builds on its foundations.[56]

In addition to hypothesizing that superluminal travel is possible under certain conditions, the paper suggests that such speeds result in the "instantaneous removal of energy-mass." One might think of this, colloquially in any event, as the craft becoming nonphysical—perhaps, one could even speculate, nonphysical in the same sense that information causality is nonphysical. In any event, it is a

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[53] S.A. Kivelson and B. Spivak, "The Macroscopic Character of Composite High Temperature Superconducting Wires" *Physical Review B* 92, no. 18 (Nov. 2015). Cited in "High Frequency Wave Generator – Email," US Navy, p. 11, accessed July 4, 2022, https://www.navair.navy.mil/foia/sites/g/files/jejdrs566/files/document/%5Bfilename%5D/2020-010057%20FINAL%20VERSION%20Email.pdf.

[54] On time symmetry see Yakir Aharonov, Peter Bergmann, Joel Lebowitz, "Time Symmetry in the Quantum Process of Measurement," *Physical Review* 134, no. 6B (June 1964).

[55] Mark J. Ablowitz and Ziad H. Musslimani "Integrable Nonlocal Nonlinear Schrödinger Equation," *Physical Review Letters* 110, no 6 (2013).

[56] Salvatore Pais, "Conditional Possibility of Spacecraft Propulsion at Superluminal Speeds," *International Journal of Space Science and Engineering* 3, no. 1 (2015)

well-accepted hypothesis that superluminal velocities would make time travel theoretically possible.[57] Could this explain the reports of unexplainable phenomenon from antiquity? Would this be a more precise explanation of the Nimitz phenomenon, too? If one can countenance the possibility that some Authority has been in possession of time travel technology—or indeed even comes into possession of such technology in the future—then one could retain the hypothesis that the phenomena are explained through quantum technology, but might attribute that technology either to extra-terrestrial beings, or to time traveling humans, current or future, or to a different future terrestrial intelligence, possibly somehow humanoid. Quantum mechanics offers a sort of confirmation of this possibility, in that it does not assume a necessary temporal order for cause and effect. When causality is nonlocal, an effect can be the cause of its own cause.[58]

This of course raises all the paradoxes of time travel, of which there are many.[59] One is particularly worthy of mention, though, especially in light of our foregone discussion of Kant and his thought on an interruptive supreme being. By visiting the past, a time traveller would, within the classical model of physics, inherently become a part of the causal fabric that created the time traveller to begin with. In other words, a time traveller visiting the past would attain a degree of self-causation. A time traveller with the ability to visit any moment in spacetime and, critically, to act independently of causality within any moment, would be in a position to experiment on and sculpt the entire timeline of human and even natural history. Such a time traveller could become a cause of her own world, akin to a god.

If we deem some kind of quantum technology to be the most likely explanation of the weird body, the consequences may become so incomprehensible as to undermine whatever explanatory power the solution offered. Let's save ourselves. There may be a quantum technological explanation for such a phenomenon, but there is no evidence one exists, whether human or

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[57] Gott, *Time Travel in Einstein's Universe*, 88.

[58] Jonathan Barrett, Robin Lorenz, Ognyan Oreshkov, "Cyclic Quantum Causal Models," *Nature Communications* 12, no. 885 (Feb. 2021), https://www.nature.com/articles/s41467-020-20456-x.

[59] See David Lewis, "The Paradoxes of Time Travel," *American Philosophical Quarterly* 13, no. 2 (1976): 145-152.

nonhuman. In fact, if we stay with our hypothesis about the Nimitz event, there is no real evidence that the body is even technological. Perhaps the assumption that the only path beyond our experiential world is technological itself demonstrates a form of collective hallucination. We don't know and can't explain anything about it. It could be a ghost, an angel, a demon, a glitch in the matrix, the dandruff off a 9-dimensional supertemporal planet-hopping alien.

At least until we are willing to consider other reports of encounters with similarly unexplainable phenomena in more detail, possibly drawing more concrete inductive conclusions, this marks the end to the search for the phenomenon's causality. That there is no clear causal explanation for the body does not mean we must stop learning from the encounter, however. It's possible to look for conclusions in other ways.

3.

Rather than remain fixated on the causality of the phenomenon, rather than seek an explanation for it outside of classical physics, one might embrace it simply as reports of the unexplainable within classical physics. The unexplainable appears and it does so, in Kant's words, as a "determinate experience." With this as our starting point, instead of asking about the body itself, one might ask what evidence of such a determinate experience can tell us about our world. How does the existence of something that presents itself as contradicting the causal fabric of spacetime alter our conception of history and ourselves? To clarify this inquiry, one might think of the phenomenon in relation to ourselves as *an empirical referent for our concept of self-causation and freedom*, where freedom means acting without causal constraint. A determinate experience of, and empirical referent for, the boundary between freedom and necessity, and the limit of experiential causality.

What consequences can be discerned from evidence of a determinate experience of the unexplainable within classical physics? Let's begin with the hypothetical character of our investigation of the Navy report (without abandoning the assumption of its truth). The Navy really did report such a sighting, with all those characteristics; our "hypothesis" was merely a device to smooth over any doubts about the perception, mental health, or trustworthiness of the reporter. It was necessary to create conditions in which belief was possible; we had to elect to believe the report. This election of belief is critical because, as I have argued, one will always have the ability to choose disbelief—to insist the

weird body is a hoax or mistake—as long as one cannot prove its existence one way or another. Any report or experience that resolves in the assertion "I witnessed the unexplainable" presents an ambiguity. One might dismiss the claim a priori, trusting the established foundations of reality, or post hoc, by assigning a cause later on without evidence. But one might, as I have done, elect to believe the claim, even if no explanation can be found to support it. The first conclusion to be drawn is that it's possible to make progress in our understanding of such a phenomenon, but only on the condition that one first elects to believe in its existence, or only so long as one establishes conditions for belief. What the phenomenon suggests, then, is that knowledge about the appearance of the unexplainable requires the election of belief.[60] This election is not unqualified belief, but instead is a decision, or disposition, to entertain or hypothesize the claim.[61] What we've found is that to countenance the unexplainable requires the sustained entertainment of a hypothesis—and one about which it will be impossible to know whether it can be proved.

Having affirmed something about the conditions of possibility for countenancing such a phenomenon, we might subsequently ask how these conditions differ from those required to countenance any phenomenon. We might extent our hypothesis about election of belief to posit that the causality that establishes a belief is in fact never localized to a single empirical experience. Evidence does not, without further ado, speak for itself. Instead, a single, demonstrative empirical experience illuminates the world in such a way that other phenomena of the world, and the causal fabric as a whole, reflect back the truth of the single demonstration. The election of belief in a single demonstrative experience is a condition for the reality of that experienced phenomenon to be reflected back through reality in general; asserting anything includes an assertion about the all. The causality of belief, then, is not isolated to the causality demonstrated locally in a single illustration, but instead the causality of belief runs "backward" in a way, explaining anew the entire world in memory, and then

[60] A similar point has been made by Seungbae Park; see "The Doxastic Requirement of Scientific Explanation and Understanding," *Prolegomena* 13, no. 2 (2014): 279-90.

[61] I equivocate between "decision" and "disposition" here in acknowledgment that any theory of free choice is bound up in the implications of the causality of the phenomenon—and because our conception of causality already makes belief in free will something like an elective procedure. The causality of belief as a function of choice is thus provisional, or hypothetical.

forwards again, establishing a belief about all time. In this sense, belief might be described as an event of "ecstatic temporality" in Heidegger's sense, or, adopting the language of quantum mechanics, we could say that belief, as a phenomenon of consciousness, operates with T-symmetry.

Countenancing reports of the unexplainable reveals the nature of the possibility of believing such reports. This is a kind of indirect conclusion, one not about the weird body itself but the human relation to such a possible body. Indirect conclusions arising not about but as a result of the body are made possible by using our hypothesis of such bodies as a hermeneutic lens through which to examine the familiar world. This means allowing the nature of the phenomenon to reveal itself not through its own appearance, but instead through its reflection in other things of the world. If we see the world more clearly in certain respects through that interpretative lens, then we may in turn come closer to understanding the phenomenon itself, or at least affirming its existence.

That we can, to an extent, treat reports of unexplainable phenomena like reports of interiority or mental states points to something that might be illuminated differently through the hermeneutic lens of the unexplainable body. Nothing in our experience resembles the weird body as much as consciousness. Yet, the video evidence, the radar evidence, and the fact that it was witnessed in consistent ways by multiple observers make it difficult to reduce our unexplainable body to a mental state or to consciousness. This only makes the similarity more provocative. The physicality of consciousness (if it has any) is mysterious. Like the weird body, consciousness is experienced as free from physical necessity and standard causality. Nevertheless, through the will, consciousness has the ability to interrupt and, seemingly, affect the causal order, even though it can itself never be apprehended within the causal order. It interacts with nature, but its place in nature is unknown. More metaphorically, consciousness "moves" similarly to the unexplained body: by jumps unconstrained by time or space. It can project causal pictures forwards and backwards; it can imagine a body turning at 90° without losing speed. In a sense, consciousness has more congruence with the weird body than with physical space. Does this mean there is any connection between consciousness and the unexplainable phenomenon? Is the weird body an analogy to consciousness, or a clue to the nature of consciousness? If any progress is possible on this question, it

must be taken up elsewhere.

The unexplainable body and its movement are also reflected in, analogized with, religious thought and the concept of God. To see this, we only need once more to entertain the fact that there is no reason to think this body or similar phenomena have not appeared before, even well in the past. Indeed, there is reason to think something like it has. The body doesn't need to be a time traveler in the technological sense, or even decoupled from its environment; whatever it might be, its lack of clear causality indicates the possibility it might have appeared at any time in history, to anyone, anywhere. To imagine that such appearances occurred throughout history would potentially radically alter the secular understanding of religious experience and the concept of God. If we elect to believe in the body's existence through history, this phenomenon should be interpreted as an empirical referent for the concept of God and the supernatural.

An unexplainable phenomenon that manifests as a freely acting body, in such a way as to imply a self-causation that is unconstrained by space or time, is in fact precisely proof of the existence of something that resembles the abstract concept of God, as found in religions across the world. Not proof of a benevolent creator, but evidence that would justify belief in self-causation and absolute freedom. Moreover, and along the same lines, the phenomenon would reveal the paradoxes of causation and freedom as treated by cosmology and theology. What appears to us in our technological age as a quantum time machine may have appeared to the Greeks as Zeus, and to the Christians as angels or the works of God.

The unexplainable has always haunted the explainable. It haunts Descartes and Kant; it haunts quantum mechanics. Reports of the unexplainable are and have always been ubiquitous in culture, though in our time they are rarely countenanced by an Authority and thus rarely taken seriously. In a way this makes sense. The destabilizing character of such phenomena is a threat to established power. To acknowledge an unexplainable phenomenon of this sort throws into question the nature of reality, and thus undermines those entities that have authority by virtue of being able to explain reality. Further investigation into these phenomena has the potential to be considerably more revolutionary and world-altering than Copernicus' arguments for a heliocentric cosmos. And in times of great cosmological uncertainty—in the history of Europe we can also think of the

Reformation—the wildest of religious and philosophical fantasies, as well as other forms of extremism, find fertile ground. What truth can be gleaned about these phenomena is, in its first appearance at least, a violent truth. In the wake of and as a result of the violence done to the conventional conception of the causal fabric, however, it might be possible to create a new understanding that would be more liberatory and explanatory than the one created in the wake of Copernicus and Luther—though this is not guaranteed.

Whether one entertains the Navy's report of the Nimitz sighting, or another similar report of unidentified aerial phenomena, if a single example of this kind of report can be trusted, it will imply the existence of one or more of the following: 1) extraterrestrial activity on Earth, currently and potentially through history, or 2) a secret human technology that has existed for an unknown period of time, possibly involving time travel, or 3) a time traveling future intelligence, whether human, humanoid, or other, or 4) something which, in an indeterminate sense, could be called "supernatural," or beyond conventional conceptions of nature. These are not mutually exclusive, and it is possible that all three hypotheses are true.

Finally, it is important to note that, even if one elects to believe the Navy report, and it produces some understanding, this should not rule out dissembling by the Authorities in question. Much more should be said about the political implications of the Navy's report. The report is not evidence of what the Navy, or any Authority, actually knows about such unexplainable phenomena, but evidence rather of what it wants the public to know about these phenomena. The long history of reports similar to that of the Nimitz pilots, indicate that the Navy, or the Pentagon, likely has more information than it is sharing. It is not necessary to rely on Navy reports to posit the existence of these phenomena, and even if we dismiss the possibility of secret human technology, there is good reason to submit any report of such a phenomenon by an Authority to operations of doubt before submitting it to operations of belief. I selected the Navy report to address in this paper in order to piggyback on the authority generally granted to the government, and because of its unique explanatory power, but in fact analysis of reports from observers further from the power or authority might be more revealing and involve less complicated analysis in order to believe. To contemplate these bodies in the context of national defense may be an

undesirable approach. What is important, however, is to locate these phenomena in the context of authority, reportative speech, and philosophical inquiry about causality.

If in this paper I have elucidated some of the difficulties of investigating such reports, and sufficiently indicated the scope of their potential consequences, that will be enough for the present.

jeremybutman@gmail.com

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