

The Pseudoscience Shelf, Revisited

A companion to Pseudoscience on the Margin — what the academic demarcation literature says our cut gets right, what it says we mislabeled, and why the fix matters most for the theories that actually kill people.

SignalWatch · method note · the A1/A2 classifier read against philosophy of science and the national-security literature

The first pseudoscience report made an honest cut and then flagged its own discomfort: of the fourteen theories sorted onto the pseudoscience shelf — defined precisely by the *absence* of a hidden-villain spine — nine still spoke the language of mainstream suppression. The report read that as a leak across the A1 gate and called the shelf 'in part, a queue.' This note argues the opposite. That leak is not a defect in the corpus; it is a feature the philosophy of science has been describing for fifteen years. Seeing it correctly changes one design decision — and that one decision is the difference between a classifier that can see the science-denial spine of climate and vaccine disinformation and one that is structurally blind to it.

1 · The finding we mislabeled

The original report treated 'mainstream science ignores it / academia is covering it up / conventional medicine dismisses it' as a degraded conspiracy signal — a villain who exited through the door marked A1 and climbed back through the rhetoric. The demarcation literature has a cleaner account: this is an **immunizing strategy**, and immunizing strategies are among the things that *make a claim pseudoscientific in the first place*.

Boudry and Braeckman (2011) define an immunizing strategy as an argument that renders a belief system invulnerable to evidence and criticism, and an epistemic defense mechanism as a structural feature of the belief system that does the same work. The 'they refuse to look' frame is the canonical example: it is an auxiliary hypothesis whose only job is to explain away the absence of mainstream acceptance without conceding the claim is wrong. The Stanford Encyclopedia of Philosophy uses exactly this property to separate pseudoscience from ordinary error — unlike most false beliefs, pseudoscience travels with built-in defenses against refutation (Hansson, 2008/2021).

THE REFRAME

The nine-of-fourteen number is not measuring contamination from the conspiracy category. Read through the immunization lens, it is measuring how many theories on the shelf carry a **functioning epistemic defense mechanism** — a **feature signal consistent with the immunization account of pseudoscience**, not a leakage signal.

Crucially, immunization is not a clean *discriminator* between pseudoscience and conspiracy theory: both lean on the same rhetorical substrate (Lobato et al., 2014; Fasce & Picó, 2019). The right reading is that suppression rhetoric is shared cognitive terrain — present where either label belongs.

This is not a soft reading. Fasce (2017, 2019) folds the move directly into the demarcation: science denialism counts as pseudoscience precisely because it manufactures fake scientific controversy using conspiratorial ideation. The persecution frame is not an accident the believer reaches for; it is the

load-bearing structure that lets an unfalsifiable claim survive contact with evidence. Our scanner already fires on the Galileo gambit — 'they laughed at Galileo too.' Suppression rhetoric is the same fallacy's older sibling, and it deserves the same treatment: a named marker, not a footnote in retrospective analysis.

2 • Where the cut is academically sound

Two things in the original framework are stronger than the report claimed for them.

The multicriterial method is the live consensus

After Laudan declared the demarcation problem dead in 1983, Pigliucci and Boudry's *Philosophy of Pseudoscience* (2013) revived it, and the dominant approach since has been Hansson's: stop hunting for a single necessary-and-sufficient criterion and diagnose pseudoscience symptomatically, from a cluster of markers (Hansson, 2009, 2013). The A2 marker battery — physical-law violation, predatory venue, Galileo-gambit rhetoric — is a working implementation of that program. It is defensible to a reviewer because it stopped trying to be a definition and became a diagnostic.

The professionalism spectrum is measuring a real criterion

Fasce's metacriterion makes *mimicry of science* a necessary condition for something to count as pseudoscience (Fasce, 2019). The report's register axis — the ninety-second TikTok at one end, the thirty-page self-published 'unified field theory' PDF and the Academia.edu preprint at the other — is, whether or not it was designed this way, a direct measurement of degree of scientific mimicry. The crank-paper tail is not a curiosity in the venue mix; it is the formal end of the criterion that separates pseudoscience from mere falsehood. That reframing also justifies the report's own open-frontier recommendation: harvesting viXra and predatory journals is not scope creep, it is sampling the criterial high-mimicry end that the current ingest path under-counts.

The empirical foundation already exists. Fasce and Picó (2019) introduced the **Pseudoscientific Belief Scale (PSEUDO)**, a validated psychometric instrument that operationalizes pseudoscience-acceptance as a *scored* construct rather than a binary classification. The instrument's existence is itself an argument: the literature has been measuring pseudoscience dimensionally for years. The dimensional fix this note recommends in §5 is not novel — it is catching the SignalWatch architecture up to the instrument the field already uses.

3 • The definitional fault line

The framework's one genuinely contestable choice is treating A1 (hidden malevolent actor causing or covering up harm) and A2 (wrong-about-reality) as independent axes. The leading definitions in the conspiracy-theory literature do not separate them.

Douglas, Uscinski, Sutton and colleagues (2019) define conspiracy theories as explanations of events as the secret and malicious acts of powerful groups — malevolence is near-definitional, which supports the villain axis. But Uscinski's standard formulation requires only a small group of powerful people acting in secret for their own benefit and against the common good — an agent against the public interest, not necessarily an actor inflicting active, named harm. The A1 gate's insistence on *causing harm* is stricter than that, and it is why the free-energy and elongated-skulls cases fell to the pseudoscience side. A reviewer could reasonably argue some of them are conspiracy theories under the standard definition and were under-counted.

The deeper issue is that the newest reengineered definition from Douglas and Sutton's group defines a conspiracy theory as a claim that the public is being pervasively lied to about reality, to let some group enact a harmful, self-serving agenda. That definition **fuses** deception-about-reality (our A2) with a harmful agenda (our A1) into a single construct. The two axes do not separate cleanly in the corpus because, in the leading psychological definition, they are not actually orthogonal. There is no field-wide consensus definition (Nera & Schöpfer, 2023; Uscinski & Enders, 2023), so operationalizing our own is legitimate — but the choice should be declared, not assumed, and the entanglement is the theoretical reason the shelf 'leaks.'

THE CONSEQUENCE

If reality-distortion and harmful-agenda are entangled rather than orthogonal, a binary gate that routes a theory to exactly one shelf will always misfile the cases that score high on both. Those cases are not edge cases. They are the most dangerous theories we track.

4 • The shelf is in the wrong place for the theories that matter

This is the argument that should change the architecture. SignalWatch files anti-vaccine theories, suppressed-cancer-cure theories, and climate-related denial as *conspiracy theories*, because they clear the A1 gate — they name a villain inflicting harm (Big Pharma, the energy industry, a captured regulator). Pseudoscience is then defined as the residual: whatever is left after the high-harm cases are routed away. The result is structural and quiet: **the theories with the highest national-security and public-health stakes carry no pseudoscience score at all.**

The demarcation literature says that is exactly backwards. Hansson's 'Science denial as a form of pseudoscience' (2017) argues that organized denialism — climate-science denial and anti-vaccine activism foremost among the examples — *is* pseudoscience: it mimics scientific controversy, deploys conspiratorial immunization, and fails the same reliability test as homeopathy or astrology. Under the academic definition, climate denial and anti-vax are not conspiracy theories that happen to abuse science. They are pseudoscience with a villain attached. Routing them away from the pseudoscience analysis discards the very dimension — the reality-distortion mechanism — that the counter-messaging literature

says you must target.

Why the missing dimension is a security problem, not a taxonomy quibble

Vaccine denial. The WHO named vaccine hesitancy one of its ten leading threats to global health in 2019. In 2025 the United States recorded **2,144 confirmed measles cases** across 45 jurisdictions — its worst year since elimination was declared in 2000 — with **three deaths**, all unvaccinated (two children, one adult), and roughly 90% of cases among the unvaccinated or unknown-status. The regional toll is bigger still: **12,596 confirmed cases across the Americas** with 28 deaths, a roughly thirty-fold increase over 2024 (PAHO, 10 Nov 2025). On that date the Pan American Health Organization announced that the Region of the Americas had *lost* its verification as free from endemic measles transmission — twelve months of sustained transmission in Canada was the trigger, not the United States, though the US elimination-status review is now itself delayed. The mechanism that drives the curve is not only 'Big Pharma is lying' (the A1 villain) — it is the wrong-about-reality claim that the vaccine itself is dangerous and the science is fake (the A2 spine). Inoculation and prebunking interventions (Lewandowsky et al.; van der Linden) target the *reality-distortion and rhetorical-technique layer*. A classifier that only sees the villain cannot route to the counter-strategy that works.

The Cost of the Residual-Shelf Design

High-harm science denial scores the A2 spine the literature cares about — but currently carries no A2 tag.



Sources: WHO 2019; CDC measles data 2025; PAHO 10 Nov 2025 release; ASTHO 2026; CIDRAP 2025; PMC: Measles resurgence in the United States 2025. The public-health stakes sit inside theories SignalWatch curre

Figure A — the public-health stakes sit inside theories SignalWatch currently files as pure conspiracy, stripping out the science-denial (A2) dimension entirely. Sources: WHO 2019; CDC measles data 2025; PAHO 10 Nov 2025; ASTHO 2026; CIDRAP 2025.

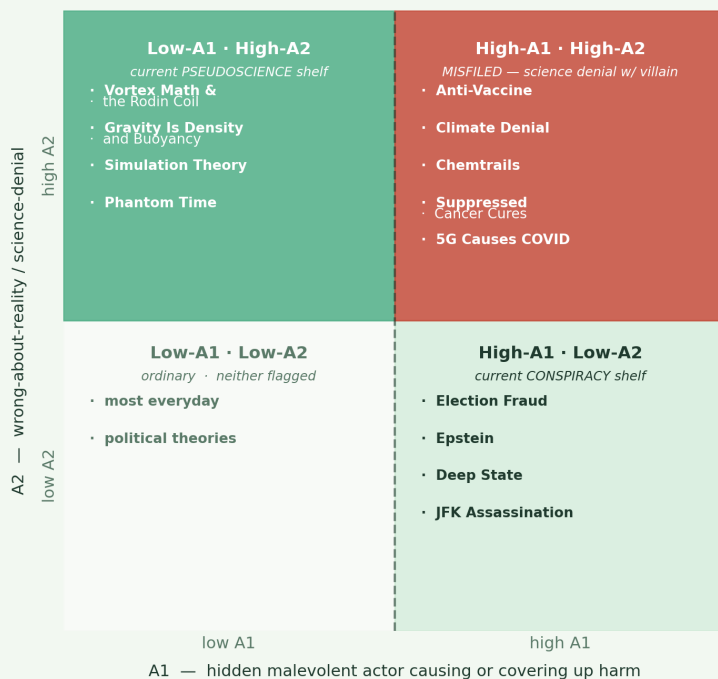
Climate denial. The U.S. defense and intelligence establishment has treated climate change as a national-security 'threat multiplier' since the 2007 CNA report and the Pentagon's 2014 Climate Adaptation Roadmap. That framing is now itself contested terrain: the **2025 Annual Threat Assessment**, briefed to the Senate by DNI Tulsi Gabbard on 25 March 2025, was the first ATA in over a decade to omit any mention of climate change (National Security Archive, 2025; Center for Climate & Security, 2025). Meanwhile adversary information operations exploit the disinformation layer directly — Russian campaigns piggybacked on Hurricane Helene and on European flooding in late 2024 to corrode disaster response and trust. Climate denial is, definitionally, organized science denial — pseudoscience under Hansson (2017) — wrapped in a villain frame ('the climate cabal,' 'the Green agenda'). Tracking only the villain misses the reality-distortion engine the adversary is actually turning.

5 • Recommendations — how the concept should change

None of this argues for dissolving the A1 distinction. The distinction is real and useful: theories that name a villain inflicting harm behave differently, spread differently, and ask different things of believers — anti-vax produces measles outbreaks; 'mainstream physics ignores vortex math' produces YouTube videos. The fix is not to merge the shelves. It is to stop treating pseudoscience as a residual *bin* and start treating it as a cross-cutting *dimension*.

Make A2 a Dimension, Not a Shelf

The current architecture is a binary gate: any theory with a hidden-villain spine is filed as a conspiracy theory. The highest-A2 theories — where science-denial does the actual damage — disappear from the pseudoscience shelf when they cross that gate.



The fix

Make A2 a per-theory score, not a shelf-membership flag.

- Compute A1 and A2 scores for every theory in the corpus.
- Keep the pastel-green Pseudoscience shelf as the user-friendly view of low-A1 / high-A2 theories.
- Expose an A2 chip on conspiracy-theory pages where the score fires (anti-vax, climate denial).
- Counter-messaging consumers (inoculation, prebunking) read the A2 score — not the shelf-membership flag.
- Promotion stays bidirectional: a sharpening villain promotes a theory rightward; a sharpening A2 lifts it upward.

The current binary gate sends every high-A1 theory rightward, regardless of A2 score — so the misfiled-corner (anti-vax, climate denial, suppressed-cure plots) carries no pseudoscience tag at

Figure B — the architectural argument. The current binary cut sends every high-A1 theory to the conspiracy shelf, including the high-A2 ones where science-denial does the actual damage. A score-not-shelf design exposes the misfiled corner without abolishing the user-friendly Pseudoscience view.

- **1 • Make A2 a score every theory carries, not a shelf only the residual lands on.** Compute an A1 (malevolent-actor) score and an A2 (science-denial / reality-distortion) score for the whole corpus. Climate denial then reads high-A1 + high-A2; vortex math reads low-A1 + high-A2; election fraud reads high-A1 + low-A2. **Keep the pastel-green Pseudoscience navigational shelf as the user-friendly view** — populated by the low-A1 / high-A2 cell of the dimensional model. **Expose an A2 chip** on conspiracy-theory pages where the score fires (anti-vax, climate denial, suppressed-cure plots) so the science-denial spine becomes visible there too. The shelf is preserved as navigation; the score is added as analysis.
- **2 • Add a science-denial subtype.** Following Hansson (2017), tag organized denialism (climate, vaccine, germ-theory, evolution) explicitly as pseudoscience-with-a-villain, so the highest-harm theories appear in pseudoscience analytics instead of disappearing into the conspiracy shelf.

- **3 · Score 'mainstream X suppresses' as an immunizing-strategy marker.** Implement the report's own proposed suppression marker — but label it for what the literature calls it (Boudry & Braeckman, 2011; Hansson, 2009), scored on core claims and atom text, sitting beside the Galileo-gambit marker rather than read as a weak conspiracy spine.
- **4 · Treat the register axis as a mimicry score.** Formalize the professionalism spectrum as a measured degree-of-scientific-mimicry feature (Fasce, 2019), and prioritize the high-mimicry crank-archive harvest (viXra, ResearchGate + R4, predatory-journal classifier) because that end is criterial, not decorative.
- **5 · Add a sincere-vs-commercial axis.** The marketing-share finding gestures at a distinction the literature names — true-believer vs grift. Cassam (2019) develops the figure of the *conspiracy entrepreneur* — the actor whose claim-making is a business model, not a sincere epistemic state. The scalar-wand seller and the free-energy idealist are doing different things; make it an explicit dimension rather than an emergent property of venue mix.
- **6 · Watch the queue both ways, and route the A2 flag to counter-messaging.** Keep the auto-promotion rule (a sharpening villain promotes a theory toward the conspiracy shelf) but add the symmetric move: a high-harm conspiracy theory whose claims are demonstrably reality-distorting gets a high A2 flag. The flag is not analytic decoration — it is the input to the surfaces that consume pseudoscience data: prebunking artifact generators, inoculation-aligned counter-messaging products, and the A2 chip rendered on the theory's public dashboard. The PSEUDO score (Fasce & Picó, 2019) is the empirical analog: a continuous measure of how pseudoscientific a belief is, regardless of whether it also has a villain.

6 · Closing

The original report ended on a paradox: theories reaching for the villain frame with one hand while the A1 gate holds them back with the other. The resolution is that the strain was never evidence of a misfiled theory — it was the signature of a working pseudoscience. Conspiracy theory and pseudoscience share a rhetorical and cognitive substrate (Lobato et al., 2014; Fasce & Picó, 2019); the suppression frame is the seam where that shared substrate shows through the text.

The practical stakes are not academic. A binary that can only file a theory as conspiracy or pseudoscience will always strip the science-denial dimension off the theories where that dimension does the most damage — the ones eroding herd immunity and the ones an adversary turns during a disaster. Make pseudoscience a dimension rather than a shelf — and keep the shelf as the user's way to find the low-A1 / high-A2 quadrant — and SignalWatch can finally see the reality-distortion engine inside the cases that matter most, and route them to the counter-strategy that the evidence says actually works.

ONE-LINE VERSION

Pseudoscience isn't the shelf next door to conspiracy theory. It's a dimension that runs straight through it — and the theories where it matters most are the ones we currently file somewhere else.

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Academic sources are cited in standard author–year form; current-events sources are named inline. Figures and counts are drawn from the public-health and national-security reporting listed below and were verified against primary sources in June 2026.

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This method note accompanies *Pseudoscience on the Margin* (SignalWatch, June 2026). The A1/A2 classifier and promotion path are documented in `epistemic_deviance_build.md` (SignalWatch internal). © SignalWatch — free to use with attribution. thesignalwatcher.com