

How Credentialed Professionals Shape Policy When Method Governance Is Stripped

The Horvath Case Study

*Human Drift and Hallucination, what cognitive research actually says about methods,
tools, and the governance question that policy is missing*

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Executive Summary

A credentialed neuroscientist took his title into the United States Senate Commerce Committee on January 15, 2026, and delivered an oral statement claiming that EdTech harms learning because human cognition is biological and screens circumvent biological learning. The video of that statement has been viewed more than two million times. State and federal policy actors are now citing the binary it produced.

This paper makes four claims. First, the cognitive science Horvath invokes does not support the biological-determinism mechanism he advances. The same sixty-year research base shows that passive deployment of any instructional medium produces weak learning, and that active method governance produces strong learning. The variable is method, not tool. Second, Horvath's January 9, 2026 podcast appearance on Chalk & Talk, his written submission to the Senate, his book *The Digital Delusion*, and his January 15, 2026 oral Senate testimony do not say the same thing. Each artifact hedges differently. The book and written testimony each end with the disclaimer "This is not a call to reject technology." The podcast (six days before the Senate appearance) explicitly concedes three categories where edtech "actually works" and endorses context-dependent deployment. The oral testimony ends with the binary "remove the technology or surrender" and rules out methods governance by name. The hedge phrases sit in the artifacts that reach more cautious audiences (publisher copy, written submission, book). The unhedged binary sits in the artifact that travels widely (the viral oral testimony). The author reads this distribution as the structural shape of strategic ambiguity: incompatible readings of the speaker's position remain available depending on which artifact a challenger or defender invokes. The pattern is multi-audience drift, not Senate-format compression. The four-artifact analysis presented here is original primary-source forensic work; the author found no public example of another commentator at time of publication who set the four artifacts side by side and documented the contradictions across them. Third, the panel surrounding Horvath drifted in the same direction at the same time. Each witness arrived with a published research record that contradicted the binary they collectively delivered. The hearing converted individual drift into apparent expert consensus. Fourth, the data Horvath cites as evidence of cognitive decline is itself open to challenge. The 2010 inflection point coincides with the WEIRD critique that questioned whether the underlying instruments measure what they claim to measure across populations. Correlation between EdTech adoption and PISA decline does not establish causation, and the WEIRD critique opens a competing causal explanation the hearing did not address. The WEIRD challenge is the most underreported finding in this paper; it points to a measurement-foundation problem that outlasts the specific Horvath case and applies to any policy effort that relies on cross-year cognitive-instrument comparisons across the period when the underlying populations and the instruments themselves were both shifting.

The policy answer to Senator Hickenlooper's question about active over passive learning is a three-part standard applicable to any tool deployed in a learning environment: active cognitive demand on

the learner, evidence that the deployment method produces the outcome it claims, and named human accountability with authority to modify or reject any deployment that fails the first two conditions. That standard applies equally to laptops, AI, textbooks, and human teachers. The hearing produced no such standard. This paper proposes one and offers operational evidence that it can be implemented.

The author writes this paper as someone whose own work uses AI extensively and methodologically. The HAIA-RECCLIN framework and the Human Enhancement Quotient instrument referenced in this paper are one operational example of method governance applied to AI collaboration in adult professional contexts. They are not offered as the answer for all settings or all aspects. They are offered as evidence that the principle does not exist only in theory and that an application of the principle can be built and tested. The same evidentiary discipline this paper demands of Horvath, this paper applies to itself.

Overview

This is a paper about three things that should not be conflated and have been.

The first is what Horvath said in front of the Senate Commerce Committee on January 15, 2026, captured on video and circulating with more than two million views. The second is what he wrote in the written testimony submitted to the same hearing, what he writes in his published book *The Digital Delusion*, and what he said on the Chalk & Talk podcast on January 9, 2026, six days before the Senate appearance. The third is what cognitive research actually supports about how children learn, what role tools play, and what policy levers can reliably change outcomes.

The four artifacts diverge. The oral Senate testimony commits cleanly to biological determinism and a removal binary, ruling out methods governance by name. The written Senate testimony hedges with seven governance recommendations layered over the same biological-determinism mechanism. The book hedges with the line "This is not a call to reject technology" appended to a body that argues otherwise. The Chalk & Talk podcast, six days before the Senate testimony, explicitly concedes three methods-governance categories where edtech "actually works" and endorses context-dependent deployment with the line "something is going to be better than nothing." The cognitive research does not support the unified case any of them claim to make. It supports a methods-and-governance case that the podcast comes closest to articulating, that the written testimony partially gestures toward, and that the oral testimony rules out by name.

This paper documents the divergence directly from the source artifacts. It then documents how three other expert witnesses on the panel drifted from their own published research positions in parallel, producing the appearance of consensus. It then offers the methods-governance position the cognitive research actually supports, with operational evidence from the author's own AI collaboration practice that such a position is testable at small scale and worth testing at population scale.

The series this paper sits within argues that human hallucination is what happens when real data, real research, and real expertise are stripped of methodology and traveled as settled fact to audiences without the tools to evaluate the interpretation. The first entry in the series documented this pattern using a viral Ipsos gender-attitudes survey. This entry escalates: from a viral consumer-survey misreading to a credentialed federal-hearing case where the methodological failure is producing legislation.

This paper is not about whether one expert can be misquoted or unfairly clipped. The viral video is not a clip. It is the full opening statement Horvath delivered to the Senate, captured as he chose to deliver it. The C-SPAN clip's circulation reproduced the very dynamic the panel was warning about: the attention economy rewarding the simplest version of the most credentialed claim. That irony is itself the phenomenon.

1. The Video Clip: What Horvath Actually Said In The Hearing Room

The viral clip is not a thirty-second extraction. It is Horvath's complete oral opening statement, running approximately five minutes, delivered to the Senate Commerce Committee on January 15, 2026.

He opens with a generational framing. "Our kids are less cognitively capable than we were at their age." He grounds the claim in historical progress: since standardized cognitive measurement began in the late 1800s, every generation has outperformed its parents. He credits school as the mechanism. Then he identifies the break. "Until Gen Z. Gen Z is the first generation in modern history to underperform us on basically every cognitive measure we have, from basic attention to memory to literacy to numeracy to executive functioning to even general IQ, even though they go to more school than we did."

He then asks the question that organizes the rest of the statement. "What happened around 2010 that decoupled schooling from cognitive development?" He rules out schools as a changed variable, on the grounds that schools look the same. He rules out biology as a changed variable, on the grounds that biology has not had time to evolve. He concludes: "The answer appears to be the tools we are using within schools to drive that learning."

He then produces the headline finding that became the viral binary. "Across 80 countries, if you look at the data, once countries adopt digital technology widely in schools, performance goes down significantly to the point where kids who use computers about five hours per day in school for learning purposes will score over two-thirds of a standard deviation less than kids who rarely or never touch tech at school."

He acknowledges the correlation problem. "Of course, this is all correlative. What we really want is causative." He then claims to have both research and biological mechanisms.

The mechanism claim is the load-bearing move. "We now have the clear understanding of why tech does not work for learning. And it is all biological. It's not that the tech isn't being used well enough. We haven't been trained enough. We need better programs. It's we have evolved biologically to learn from other human beings, not from screens. And screens circumvent that process."

This passage is critical. Horvath does not just argue that tools matter. He explicitly forecloses every method-governance alternative by name. He rules out deployment quality. He rules out instructor training. He rules out program design. He attributes failure to evolved human biology. If the cause is biological mismatch between human cognition and screen design, then no method can fix it because no method can change biology. This is biological determinism, stated cleanly, with method-governance alternatives ruled out by name.

He closes with the binary. "When you know something is wrong, do better. Get tech out of schools, go back to analog methods. Or two, we can redefine our terms. Redefine what it means to be an effective learner. That's not progress. It's surrender."

He then adds the coda that broadens the argument from EdTech to any classroom screen. "Even in schools, it doesn't matter what the size of the screen is. If it's a phone, a laptop, a desktop. It doesn't matter who bought it. Is it school sanctioned? Does it have the word education stamped on it? It doesn't matter."

The clip ends here. This is the version that traveled.

2. The Podcast Six Days Earlier: What Horvath Said Before The Senate

On January 9, 2026, six days before the Senate appearance, Horvath sat for an hour-and-fifteen-minute interview with Anna Stokke, a math professor and host of the Chalk & Talk podcast. The episode, titled "Why more classroom technology is making students learn less," is in the public record. The transcript reads as a sustained walk-through of the same argument structure the Senate testimony delivers, with one substantial difference. The podcast contains explicit concessions to methods governance that the Senate testimony rules out by name.

Three concessions are load-bearing.

First, on the methods categories where edtech "actually works" (podcast, 21:34-23:53). Horvath identifies three: intelligent tutoring systems that organize "questions, immediate feedback, organize questions in a way that allows you basically to deal with recall, feedback, spacing, interleaving"; learning disorder remediation that drills phonemic awareness; and procedural training including flight simulators, surgical practice, and F1 driving simulation. He says these "actually work." His exact framing: "There's basically three levels where edtech will work, but they're a lot less powerful than people assume." The qualifier matters. He concedes the categories work. He stipulates the magnitude is smaller than vendors claim. This is a methods-governance position. Specific deployments produce measurable learning when the deployment method matches the cognitive task structure. Six days later in the Senate he stated: "It's not that the tech isn't being used well enough. We haven't been trained enough. We need better programs." The categories he conceded on the podcast are exactly the categories he ruled out by name in the Senate.

Second, on context-dependent deployment (podcast, 25:23-26:43). Horvath explicitly endorses the "something is better than nothing" principle. His exact words: "Something is going to be better than nothing. If you don't have a choice, if it's tech or nothing, of course you use tech. If let's imagine there's a kid with a learning disability who literally cannot engage with learning unless they have tech. I'm not an idiot. Bring in tech. If let's imagine there's some global pandemic and we shut schools down. I know that'll never happen. Of course we use tech." This is methods governance reasoning. Context

determines deployment. Named human accountability evaluates whether the tool serves the cognitive goal in the specific context. Six days later in the Senate he closed with: "Get tech out of schools, go back to analog methods. Or two, we can redefine our terms. Redefine what it means to be an effective learner. That's not progress. It's surrender." The context-dependent reasoning he endorsed on the podcast is foreclosed in the Senate by the binary close.

Third, on Postman as the authority for context-aware teaching (podcast, 28:24-29:11). When Anna Stokke raises the math-classroom scenario where advanced students need additional challenge that an over-extended teacher cannot provide directly, Horvath responds: "There's no right or wrong to any of this. Neil Postman said something really cool back in the 80s. He said, 'I have no doubt that a good teacher can use tech to help kids learn in an incredible way. I also have no doubt that that same good teacher could use a pen and paper to help kids learn. What you're talking about is good teaching versus time poor or less constructive teachers.' In which case, yeah, look, can it work if you're using it well? Sure." This passage is the cleanest possible methods-governance concession Horvath has produced in any artifact. The good teacher governs the deployment. The medium serves the method. Tech can work when deployed well. Six days later in the Senate, the same speaker delivered biological determinism that rules out the possibility a good teacher's deployment of tech can produce learning, because the failure is structural at the biological level, not at the deployment level.

The podcast also contains contradictions on smaller load-bearing claims. On AI specifically (podcast, 41:26-43:57), Horvath argues the tool exists for "expert production" only, that experts can use it to offload tasks they could verify, and that "no kid should ever touch it." Then in the next sustained passage he concedes "We can have a debate whether or not teachers should use it, but I have never heard a valid argument why a kid would ever need to touch AI." The position is binary at the K-12 level. It is methodologically nuanced at the expert level. The same tool, the same cognitive science, two different policy answers depending on which audience is being addressed. On methodological universality (podcast, 1:00:01-1:01:48), Horvath argues "All human beings learn in the exact same way" and immediately follows with "When you match pedagogy to the content, every student learns better." The first claim denies methodological variation. The second claim requires methodological precision. Both cannot operate simultaneously without internal contradiction.

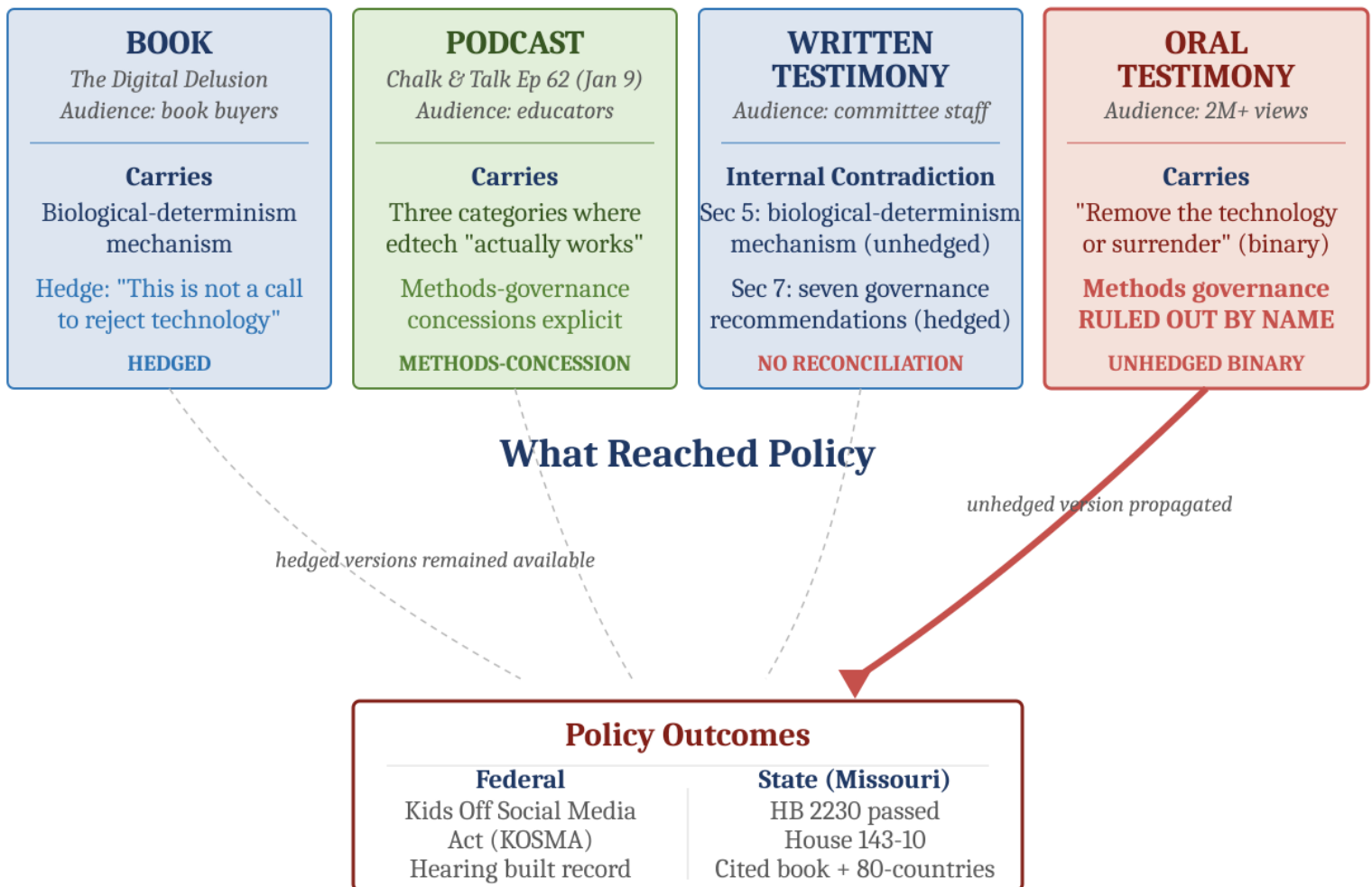
What the podcast establishes is that Horvath was producing context-specific arguments to context-specific audiences for at least the entire week before the Senate. The drift the paper documents from written testimony to oral testimony is not a Senate-format compression artifact. It is an ongoing multi-audience pattern. To Anna Stokke's audience of math educators, Horvath conceded methods-governance categories, endorsed context-dependent deployment, and cited Postman approvingly on good teachers using tech well. To the Senate audience of policymakers six days later, Horvath ruled out methods governance by name, attributed failure to evolved biology, and closed with the removal binary. The same speaker. The same week. Two incompatible positions.

The strategic ambiguity claim the paper has built around three artifacts strengthens with the fourth. The unhedged binary appears in the artifact that travels to policymakers. The methods-governance concessions appear in the artifact that travels to educators. Defenders pointing to the podcast as evidence of Horvath's nuance are pointing at the artifact whose audience is not the audience the policy work is being done in front of. The Senate is where the federal-policy-grade testimony enters the record. The podcast remains available as the more nuanced artifact. The pattern is the same pattern the written testimony executes against the oral testimony, executed across two separate venues six days apart.

Figure 1. The Four-Artifact Distribution. What each artifact carries and what reaches policy.

The Four-Artifact Distribution

What each artifact carries and what reaches policy



Source: Author analysis of four primary artifacts; Senate Commerce Committee record; Missouri HB 2230 witness testimony

3. The Written Testimony: How It Drifts From the Oral

Horvath's written testimony, submitted to the same Senate Commerce Committee, is available in the public record at

https://www.commerce.senate.gov/wp-content/uploads/media/doc/Horvath_Written%20Testimony.pdf.

Section 5 of the written testimony, titled "Why Screens Undermine Learning: A Core Mechanism," carries the same biological-determinism claim the oral testimony delivers. The written version: "Human attention systems evolved to sustain focus on a single task at a time. The prefrontal control system cannot reliably manage competing goal states without significant performance costs." And: "screens structurally train attentional habits that conflict with sustained learning. This is not a matter of discipline or willpower; it is a function of repeated conditioning."

The biological-determinism mechanism is in both versions. The written version softens the framing, but the substance is identical: cognition is wired in a way screens cannot serve, and the failure is structural, not methodological.

Section 7 of the written testimony then lists seven policy recommendations. Independent efficacy standards before deployment. Mode-equivalence validation before paper-to-digital transitions. Student data protections. Procurement transparency. Developmental screen exposure guidelines. A federal evidence clearinghouse. Funding for longitudinal outcome research. These are governance recommendations. They presuppose that policy levers can change outcomes if applied correctly.

Sections 5 and 7 cannot both be operative. If the cause of failure is evolved biological mismatch between human cognition and screen design, governance levers cannot fix it. Better-evaluated screens are still screens. Better-replicated EdTech tools still circumvent the biological learning process Section 5 says they circumvent. If governance levers can fix outcomes, then the cause is not purely biological, and Section 5's mechanism is overstated.

The Conclusion of the written testimony ends with the line: "This is not a debate about rejecting technology. It is a question of aligning educational tools with how human learning actually works."

That single sentence is the hedge. It allows the written testimony to be cited as moderate when the body's mechanism claim and the oral testimony's binary close are challenged. Defenders can point to the seven recommendations and the closing line. Critics who read the body see biological determinism that rules out the recommendations. The document supports two incompatible readings of itself.

The drift between written and oral is therefore not a story of a careful position betrayed in delivery. It is a story of internal contradiction that the oral testimony resolves in the direction the mechanism claim logically dictates. The oral testimony is the cleaner version of the argument. The written testimony is the version that allows deniability when the cleaner version is challenged.

4. The Book: How It Drifts From the Oral

The Digital Delusion (LME Global Press, 2026; trade republication by Penguin Random House Harmony Books, August 18, 2026) carries the same dual-framing pattern.

The publisher copy and book reviews across Penguin Random House, Google Books, Amazon, and Booktopia all carry the identical disclaimer line: "This is not a call to reject technology. It's a call to reclaim real learning." The book's stated Conclusion, quoted directly in independent reviews: "This was never a book about rejecting technology; it was about reclaiming education as a deeply meaningful and human endeavor."

The hedge phrasing is structurally identical to the written testimony's Conclusion. Both artifacts end on the same denial of the position the body of each text accumulates. The pattern is consistent. The book and the written testimony each end with the disclaimer that the unhedged oral testimony does not bother to include.

Independent journalism has identified the same load-bearing methodological problem. Chalkbeat's March 17, 2026 review of Horvath's evidence base reports that Elizabeth Tipton, a Northwestern University statistician who specializes in evidence synthesis, called the +0.42 instructional benchmark Horvath uses as the comparison point for EdTech effects "unrealistic" and noted that the benchmark choice drives the conclusion that EdTech effects are weak. The Chalkbeat reporting documents that Horvath's causal case is correlational, that his EdTech effect-size summary depends on a contested benchmark methodology, and that other education researchers have raised methodological concerns about the strength of the evidence base he presents as settled. A Goodreads reader review of *The Digital Delusion* makes a parallel observation in plainer language: "Dr. Horvath views 'EdTech' as a singular instructional intervention. This is wrong. A laptop is an instructional medium, not an instructional intervention. Dr. Horvath should know this, given some of the research he cites." The reviewer references John Hattie's *Visible Learning*, which Horvath himself cites in his written testimony as reference 11 to support the effect-size analysis in Section 3. The Chalkbeat reporting carries the methodological critique with named researcher attribution; the Goodreads observation is included as an illustrative reader response that arrived at a similar concern from outside the academic critique channel.

This is significant external corroboration. The medium-versus-intervention distinction is foundational to the cognitive research Horvath claims to draw from. Hattie's framework, which Horvath cites approvingly, explicitly treats instructional method as the variable and instructional medium as the carrier. By collapsing the two into a single "EdTech" category and assigning the failure to the medium, Horvath violates the analytical framework of the source he uses to support his effect-size table. Chalkbeat surfaced the methodological weakness through Tipton's named critique and the contested-benchmark documentation. The Goodreads review shows the same concern appearing in public reader response. The Senate hearing surfaced neither.

The book is therefore a longer, more thoroughly hedged version of the same argument the oral testimony delivers cleanly. The dual-framing is structural across Horvath's public work, not an artifact of the hearing format. The hedge phrase appears in the artifacts that policy actors can be pointed to when challenged. The unhedged binary appears in the artifact that policy actors actually use.

5. What Cognitive Research Actually Supports

The sixty-year research base Horvath invokes, the science-of-learning literature he claims as foundation, supports a different conclusion than the biological-determinism binary he delivers.

The Hattie *Visible Learning* synthesis, which Horvath cites as reference 11, is the largest meta-analytical aggregation in education research. Its central finding is that instructional method produces the variance in learning outcomes. Across more than 800 meta-analyses covering more than 80,000 individual studies, the effect-size distribution shows that method governance, formative feedback, teacher-student relationship quality, classroom instructional design, and student metacognitive engagement are the variables that move outcomes. The medium of delivery (book, lecture, screen, lab) is consistently a smaller effect than the method employed within that medium.

Horvath's own effect-size table in Section 3 of the written testimony shows this pattern even after his re-centering against the +0.42 instructional benchmark. Intelligent Tutoring Systems show +0.10 above his benchmark. General Learning shows -0.13 below it. The variance within his own table is method-driven. Intelligent tutoring is governed deployment. General Learning is undifferentiated deployment. His own data supports the methods reading he then dismisses.

The cognitive-architecture literature he cites in Section 5 (Kirschner and De Bruyckere on multitasking, Jolicoeur on attentional blink, Wu and Liu on psychological refractory period, Foerde on memory under distraction) does not establish biological determinism. It establishes that distraction degrades learning. Distraction is a method-and-context variable. A screen used in a structured single-task instructional context does not produce the distraction effects this literature documents. A screen used in an unstructured multitasking context does. The literature points to the deployment context, not to the medium itself.

The 1962-to-present sweep Horvath claims (referencing Dylan Wiliam's "EdTech is a revolution that has been coming for 60 years") aggregates extraordinarily different technologies, deployment contexts, instructional methods, and student populations under one finding. Sixty years of educational technology covers overhead projectors, language laboratories, programmed instruction, computer-assisted instruction, multimedia, the early internet, smartboards, learning management systems, adaptive software, mobile devices, tablets, and now generative AI. These are not comparable interventions. Aggregating them under the claim "tech enters education, learning goes down" fails the same evidentiary standard Horvath demands of EdTech vendors. He requires independent

replicated trials of specific tools. He then cites sixty years of disparate technologies as if the aggregation produces a single comparable finding. Quoting one researcher's dismissal as if it settles a contested field is appeal to authority, not evidence.

The cognitive research supports the position that method governs outcome, that medium matters as a constraint and affordance but does not determine outcome, and that the most consistent intervention effects come from structured active engagement regardless of medium. This is the position Horvath's own citations support. It is not the position he delivered.

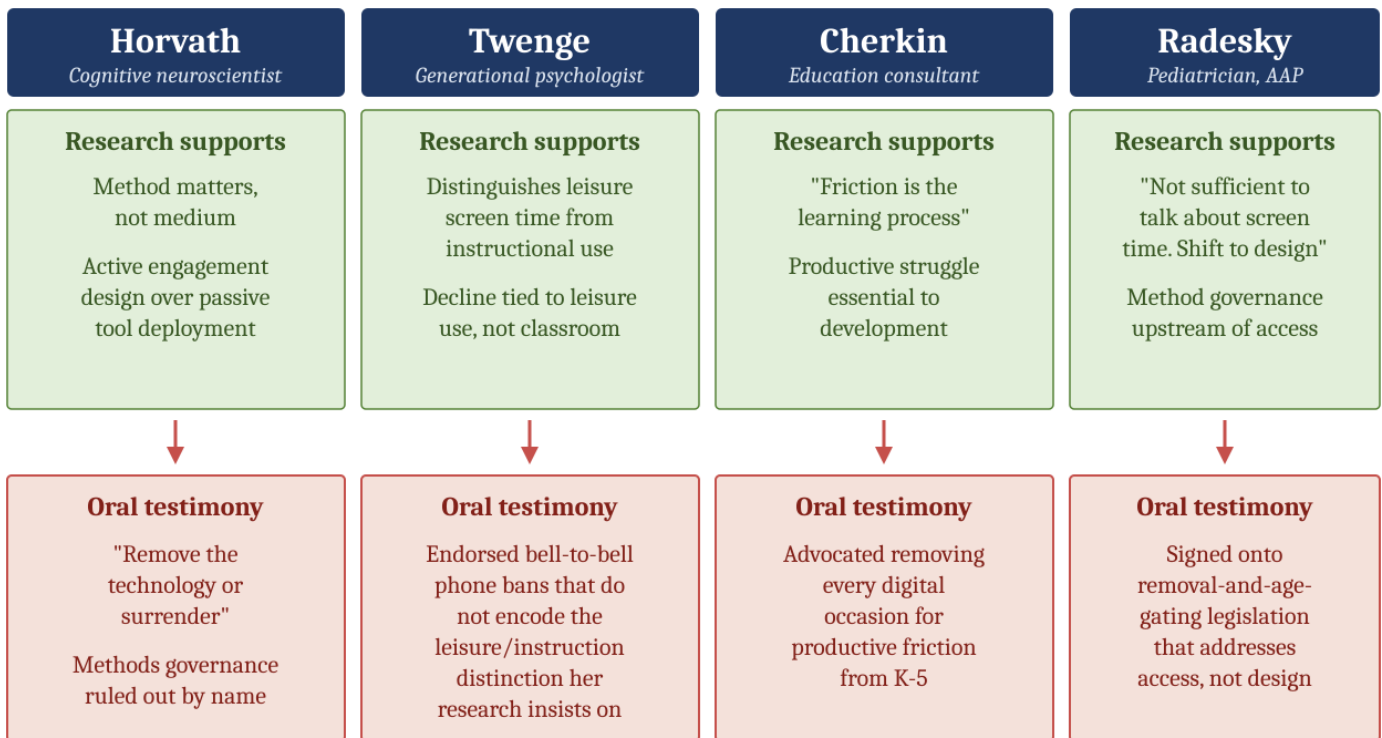
6. The Panel Compounding: Each Witness Drifted From Their Own Position

Horvath was not the only witness whose oral testimony drifted from their own published research. The hearing produced collective drift across all four witnesses, in the same direction, at the same time. The compounding is what generates the appearance of expert consensus that policy actors then cite.

Figure 2. The Drift Map. Each witness's published research vs. what they delivered in oral testimony.

The Drift Map

Each witness's published research vs. what they delivered in oral testimony



Four parallel internal contradictions converted into apparent expert consensus

Source: Author analysis of witness oral testimony at Senate Commerce Committee, January 15, 2026, against published research records

Jean Twenge's research distinguishes leisure screen time from instructional technology use. Her own oral testimony at the hearing stated this distinction explicitly: the worldwide decline in standardized test scores "was much more severe in countries where students spend more time for leisure purposes on devices during the school day" (C-SPAN, 14:00). She attributed the decline to leisure screen time. She then signed onto bell-to-bell phone bans that do not encode the distinction her own research insists on. Her published methodological care drifted out of her own oral policy position.

Emily Cherkin testified that friction is the learning process and that struggle is essential to development. "We remember these moments because in the discomfort we learned something. Friction is the learning process. When we seek benefits from the convenience of technology, we forget the benefits of struggle" (C-SPAN, 24:17). She then advocated removing every digital occasion for productive friction from K-5 environments. Her cognitive position (friction matters) and her policy position (eliminate the medium where friction occurs) point in different directions.

Jenny Radesky stated the methodologically correct frame in her testimony. "It is not sufficient to only talk about screen time. We need to shift our action to be about design. Are tech products centered around youth developmental needs and well-being, or designed around profits and market share?" (C-SPAN, 29:45). Her diagnosis is method governance: pressure tech companies upstream to require design centered on developmental needs. Her prescription then signed onto removal-and-age-gating legislation that addresses access rather than design. Her diagnosis and her prescription point in different directions. She named the right variable in her oral opening, then abandoned it in her oral closing.

Horvath wrote seven governance recommendations and orally delivered biological determinism that rules them out. His written cover and his oral position diverge.

Each witness individually drifted from their own published or stated position. Collectively, they delivered a binary none of them individually defended in their own scholarship. The hearing converted four parallel internal contradictions into apparent consensus. Senator Hickenlooper asked the methods question explicitly: "If we are going to build the problem and technical skills needed for the future, how can parents and educators encourage the active over the passive style of learning?" (C-SPAN, 1:09:23). No witness answered with a methods framework. All four converged on access restriction.

The structural failure is not Horvath alone. It is a panel of credentialed experts each drifting from their own research toward a binary the format rewards. Policy actors observing four credentialed witnesses agreeing on removal will reasonably conclude that expert consensus supports removal. The consensus is real at the level of stated oral policy positions. It is absent at the level of the witnesses' own research records.

The hearing produced consensus drift, not evidentiary consensus.

This is the methodological signature the paper documents and the line policy actors should carry forward. Apparent agreement among credentialed witnesses can mask underlying disagreement among their published research positions. Format pressure produces this drift. Disclosure absence permits it. Time and visibility reward it. Policymakers building federal-grade legislation on testimony of this kind are building on a consensus that does not exist outside the room.

The same contradiction pattern operates in the financial disclosures the witnesses opened with. Horvath began his oral testimony with the line: "I do not receive funding nor have I ever from big tech." Cherkin opened similarly: "I don't accept funding from tech companies for my work." Radesky's opening referenced her FTC and academic appointments without disclosing commercial interests. Each disclosure is technically true and materially incomplete. The disclosures rule out the easiest possible bias category (direct corporate sponsorship by the industry being criticized) while leaving every other commercial and professional interest unaddressed.

What the disclosures did not surface: Horvath publishes *The Digital Delusion* through his own LME Global imprint and has trade republication scheduled with Penguin Random House Harmony Books for August 18, 2026. Trade publishing royalty structures and advance terms scale with the public visibility of the underlying argument. Senate testimony driving more than two million YouTube views is a marketing event for a book scheduled for trade release seven months later. He also runs LME Global as a consultancy through which he conducts speaking engagements and educational professional development contracts. Public speaking fees and consultancy demand in the K-12 EdTech debate scale with the visibility and clarity of his public position. A binary, viral, controversial position generates more demand than a nuanced governance-and-methods position.

Cherkin operates The Screentime Consultant as her professional practice. Her business model is paid advice to parents and schools on the dangers of excessive screen time. A binary "remove devices from K-5" framing strengthens demand for her consultancy. A nuanced "method governance with named accountability" framing weakens it because parents and institutions would seek instructional methods experts rather than personal screen-time consultants. Twenge has published multiple books on generational mental health and adolescent technology use. Trade publishing royalties and ongoing speaking engagements scale with public profile, and a Senate appearance with viral pickup is itself a marketing event for her body of work.

Radesky's case is structurally different. Her income runs through an academic appointment at the University of Michigan and federal NICHD-funded research. She does not depend on the public visibility of her policy position in the same direct way the other three witnesses do. Her potential conflict, if any, runs through institutional alignment with the AAP Center of Excellence framework

she co-directs rather than through personal commercial advancement. She also offered the most methodologically careful framing of the four witnesses (the design-not-screen-time framing) before drifting toward the consensus binary in the closing exchange. The witness with the cleanest separation between income and policy framing was also the witness who came closest to delivering the methods-governance answer the cognitive research supports.

The pattern is the same pattern this paper has documented across the witnesses' substantive arguments. The disclosures opened with what could be said cleanly (no big tech funding) and left out what would complicate the testimony (the commercial and professional interests that scale with the visibility of a strong public-policy position). This is the same incomplete-but-presented-as-complete move the witnesses' substantive arguments execute. They argued for friction and active cognitive demand in their published research and stated diagnoses, then closed orally with binary access restriction. They disclosed the absence of one bias category, then left every other category undisclosed. The format permitted both.

Adjacent professional norms in medical journals (ICMJE), scientific publishing (COPE), academic peer review (funding-source statements), and journalism (SPJ) require disclosure of all material commercial and professional interests, not just the easiest category. The Senate hearing operated under no formal disclosure standard. The paper does not claim the witnesses were dishonest within the rules they were operating under. The paper claims that hearings producing federal-policy-grade testimony should adopt a disclosure standard consistent with adjacent professional norms, and that the absence of such a standard allowed incomplete disclosures to read as complete ones. The witnesses spoke truthfully within a permissive frame. The frame itself failed.

A defense the paper anticipates is that every public academic carries commercial interests of this kind, and that prosecuting Horvath for book sales prosecutes the entire credentialed class. The defense is not wrong about the prevalence of conflict. It is wrong about what the paper claims. The paper claims that credentialed actors with conflicts make observable choices about how to handle them, and the choice is the disclosure that matters, not the announcement of the absence of one bias category.

Geoffrey Hinton resigned from Google in May 2023 specifically to speak about AI risks without the conflict of interest his employment created. Hinton's choice was income separation. He removed the structural alignment between his income and his public position so that the public position could be received as independent. Hinton is the public-record example of what credentialed actors do when they intend their independence to be observable rather than asserted.

The author of this paper has made the parallel choice for the same parallel reason. The author publishes books that are commercially available. The HAIA-RECCLIN framework, the GOPEL infrastructure specification, the Human Enhancement Quotient instrument, and the related governance work are open source and Creative Commons licensed. They are published on GitHub at

github.com/basilpuglisi/HAIA. Anyone can implement them without paying the author. The framework cannot be sold for personal gain in the way a trade-published book can. The choice of open-source publication is the operational signal that the framework's public position is intended to be independent of personal commercial pressure.

Horvath's choice runs the other direction. The book is commercial. The Penguin Random House Harmony Books trade republication scheduled for August 18, 2026 scales the commercial interest. The framework supporting the testimony is not open-sourced. The commercial gain is built into the position rather than separated from it. The disclosure that matters is the choice. The author reads these choices as observable indicators of whether the public position is independent of commercial pressure or aligned with it. Hinton stepped away from the commercial channel before publishing his warning. Basil released the framework as Creative Commons-licensed open source so it cannot be sold for personal gain. Horvath retained the commercial publication channel and expanded it through trade republication. The author's reading: the structural commercial alignment of Horvath's position is observable in the public record, and the absence of any disclosure architecture comparable to Hinton's separation or Basil's open-source choice is the disclosure failure the paper documents. Other readers may draw different conclusions from the same observable choices. The paper presents the choices and the author's reading of them.

The author of this paper holds the same kind of conflicts the witnesses hold. The author publishes at BasilPuglisi.com and develops the HAIA-RECCLIN framework and HEQ instrument referenced in this paper. The visibility of the methods-governance position advanced here aligns with the author's commercial and professional interests in the same way the visibility of the removal-binary position aligns with three of the four witnesses' interests. The disclosure standard the paper proposes for the witnesses applies equally to the author.

Two practices the author has adopted to address the conflict bear naming, because they are the operational answer to the disclosure question this section raises. First, every public-facing artifact carries the #AIassisted hashtag and the byline "A Human-AI Collaboration." This is mechanical artifact-level disclosure. A reader does not need to investigate whether AI was involved in producing the work; the artifact itself declares it. The disclosure is built into the deliverable rather than left to opening-statement framing where it can be omitted, narrowly scoped, or read past. The Senate hearing produced no such artifact-level disclosure. The witnesses did not declare what frameworks, tools, or research-assistance processes shaped their testimony preparation. The practice the author models on every published item is the practice the hearing did not adopt on a single one.

Second, the framing of the operational example throughout this paper, on BasilPuglisi.com, in the HAIA-RECCLIN documentation, and in the HEQ instrument papers consistently positions the work as "this is how I solved this for me" rather than "adopt my framework." The point is to show that methods governance can be operationalized, not to promote a specific implementation. The methods

behind RECCLIN are what the paper offers as transferable. The implementation itself is context-dependent and the author makes no claim that other practitioners should adopt it. This humble framing is structural, not rhetorical. It is built into how the work is positioned in every publication. It is the answer to the conflict the disclosure raises: by framing the operational example as personal practice rather than universal prescription, the author limits the commercial use of the position the paper advances. The reader is invited to test the methods, not to buy the framework.

These two practices together with the open-source publication form the disclosure architecture the author operates under. They are stronger than the disclosures the witnesses provided because they are mechanical (built into every artifact), structural (built into how the work is framed), and material (built into the licensing of the underlying work). They are not perfect. They do not eliminate the conflict; they surface it, constrain it, and remove its commercial gain. The next section addresses the author's operational position with that disclosure on the table.

7. The Inversion: When the Discipline Blames the Tool for Its Own Methodological Failure

This is the section that explains why the paper exists.

Sections 1 through 6 audited the testimony. They documented contradictions across four artifacts, mapped the panel-compounding pattern, named the disclosure failure. The voice has been forensic. This section is different. The argument that follows is an accusation against a credentialed discipline, executed through the case of one credentialed witness. The voice shifts from documentation to direct claim because the inversion the paper documents is a normative failure, not a procedural one, and a forensic register cannot carry the claim a normative failure requires. After this section the paper returns to forensic mode for the math-professor-endorsement case, the right-wrong analysis, the misattributed myths, the standard the testimony should have defended, and the closing on AI as mirror. The middle accuses. The ends audit. The reader should expect the shift.

Academic pedagogy has required show-your-work for centuries. Source citation, peer review, methodological transparency, replicated outcomes, named human accountability for claims. These are not new standards and they are not the author's invention. They are the standards of the discipline that produced Horvath himself, the standards every credentialed academic has operated under since the founding of modern peer review in the seventeenth century. The discipline that governs how academics make claims to each other has required this discipline of every claim, on every topic, for as long as the modern research university has existed.

When educational technology entered classrooms across the WEIRD educational systems starting in the early 2010s, that discipline was not applied. Tools were deployed at scale without independent efficacy validation. Without mode-equivalence studies. Without longitudinal outcome research. Without named human accountability for cognitive outcomes. Without the methodological discipline

academic publishing has required since the seventeenth century. The discipline that governs how academics make claims about every other topic was not extended to govern how academics deploy tools to children. The 1:1 device rollouts of the 2010s, the COVID-era expansion of EdTech, the K-12 platform adoption that Horvath now correctly identifies as producing cognitive harm: none of it was governed by the methodological standards the discipline requires of every other kind of claim.

Horvath then walks into the United States Senate Commerce Committee and blames the tools.

This is the inversion the paper exists to refuse. The discipline failed first. The tool was deployed inside the disciplinary failure. The cognitive outcomes Horvath documents are the outcomes of deploying tools without the discipline that the field itself has required for centuries when making any other kind of claim. The methodological failure is not the technology's. It is the discipline's failure to govern its own technology adoption with the standards it requires of every other claim it makes. Horvath's removal binary protects the discipline from accountability for its own failure by relocating blame onto the tool. Academic pedagogy retains its prestige. The credentialed authority remains intact. The blame goes to the tool. Future tool deployments can repeat the same failure because the discipline never has to confront its own methodological abandonment.

The verbatim move where this inversion executes is in Horvath's oral testimony at C-SPAN 19:10. The exact passage:

"It's not that the tech isn't being used well enough. We haven't been trained enough. We need better programs. It's we have evolved biologically to learn from other human beings, not from screens. And screens circumvent that process."

This passage names every methods-governance alternative the cognitive research supports, then rules each one out by category. Deployment quality. Instructor training. Program design. The categories are named specifically. The rule-out is categorical. The cause is then assigned to evolved biology. Method governance is foreclosed by assertion, not by argument.

This is the load-bearing rhetorical move that allows the removal binary to read as scientifically grounded. Without the rule-out, the methods question is open and the seven written governance recommendations Horvath himself submitted in his written testimony Section 7 might actually work. With the rule-out, the recommendations become governance theater because biology cannot be addressed by governance. The oral rule-out passage is the missing piece that connects Section 5's biological mechanism to Section 7's governance recommendations and shows why they cannot coexist. Horvath's written testimony's contradiction is resolved in the oral testimony, in this single passage, by closing off the methods alternative that would otherwise force the recommendations to be operative.

The cognitive research base does not support the rule-out. Hattie's *Visible Learning* synthesis, which Horvath cites in his own written testimony as reference 11, identifies instructional method as the variable that drives outcomes across more than 800 meta-analyses covering more than 80,000 individual studies. The Kirschner and De Bruyckere multitasking literature Horvath cites in Section 5 documents that distraction degrades learning, and distraction is a method-and-context variable. Horvath's own effect-size table in Section 3 of the written testimony shows the methods variance: Intelligent Tutoring Systems show +0.10 above his +0.42 instructional benchmark; general 1:1 deployment shows -0.30 below it. The variance within his own table is method-driven. Intelligent tutoring is governed deployment. General 1:1 is undifferentiated deployment. His own data supports the methods reading he then dismisses by name in the oral rule-out.

Common sense supports the methods position as well. A textbook used as the spine of a methodologically rigorous course produces different cognitive outcomes than the same textbook handed to students with no instructional structure. A laboratory used in a method-governed sequence of inquiry produces different cognitive outcomes than the same laboratory used as unstructured exploration. A pencil used in deliberate handwriting practice produces different cognitive outcomes than a pencil used to fill in worksheet bubbles. The medium does not determine the outcome. The method does. This is not contested in the discipline that produced Horvath. It is the foundational distinction the discipline has operated under for as long as it has been a discipline.

What is novel in the author's work is not the principle. The principle is centuries old. What is novel is applying the principle to AI collaboration, where default consumer use does not require any of it. The HAIA-RECCLIN framework treats AI as a multi-role collaborator where the human assigns the role, defines the source standards, requires dissent documentation, demands tactic-to-outcome reasoning, and approves any output before it is accepted. The seven roles, the source citation, the dissent register, the human-arbiter approval: each maps directly to academic conventions that govern peer-reviewed scholarly work. RECCLIN is not invention. It is transposition. It applies the methodological discipline academic publishing has required for centuries to a new tool category that emerged faster than the discipline could extend its own standards.

The implementation gap Meta and other reviewers correctly identify between principle and policy closes when the principle is recognized as the discipline's own pedagogical standard. The paper is not asking K-12 educators to invent new governance frameworks. The paper is asking K-12 educators, federal regulators, and EdTech procurement officers to apply the methodological discipline that already governs academic work to AI tool deployment in learning contexts. That discipline has decades of operational experience behind it across the entire research university system. The standards exist. They have been written. They have been refined. They have been operationalized at scale for centuries. They were not applied to EdTech. They are not being applied to AI in classrooms. Applying them is the governance answer.

This was not built as theory first. The author developed RECCLIN from raw multi-platform AI outputs assembled across more than a year of practitioner work, refined into the published framework currently in operation. The intent was to apply to AI collaboration the discipline academic publishing has required of every other kind of claim. The framework operates in adult professional contexts (consulting, governance work, content production). It is not designed for K-12 classroom deployment, and the author makes no claim that it would transfer directly to that environment. K-12 educators designing methods-governance implementations for classroom AI would build something different, constrained by developmental appropriateness, instructional context, and pedagogical goals that adult professional governance does not share. What transfers across contexts is the principle: the discipline's own pedagogical standards apply to tools as they apply to claims, and applying them is what method governance means in operation.

The Human Enhancement Quotient instrument was developed specifically to test whether the framework was actually doing what it claimed. The instrument tracks four dimensions: Cognitive Agility Speed, Ethical Alignment Index, Collaborative Intelligence Quotient, and Adaptive Growth Rate. A 2025 cross-platform feasibility study produced an intraclass correlation coefficient of 0.96 across five independent AI architectures (one practitioner, five platforms). Preliminary cross-user testing (n=10) produced dimensional variance within four points and consistent identification of CIQ as the lowest-scoring dimension. A four-instance practitioner record over six months has been documented. Formal psychometric validation targeting Cronbach's alpha greater than 0.75 across n=100 or more participants is the 2026 priority.

This is small-N hypothesis-generating evidence. It is not population-scale validation. The same evidentiary standard this paper applies to Horvath, this paper applies to itself. The four-instance practitioner record shows feasibility at the smallest possible scale. It does not establish reliability, validity, or generalizability of either the framework or the instrument. Independent peer-reviewed validation is the work in progress, not the work complete. A governance argument that exempted itself from the discipline it imposes on others would reproduce the failure it diagnoses.

What this evidence shows, modestly, is that method governance applied to AI collaboration can be implemented, can be measured, and can be tested at scale. The principle is not novel. The application to AI is. The implementation is one operational example. Other practitioners working in different domains will build different implementations grounded in the same principle, drawing on the same disciplinary standards. What the field needs is not adoption of any one framework. What the field needs is the recognition that the discipline already has the standards required to govern tool deployment, that those standards were not applied to EdTech and are not being applied to AI in classrooms, and that the failure to apply them is the discipline's failure, not the tool's.

8. The Math-Professor Endorsement: When the Discipline Whose Standard Is "Show Your Work" Endorses the Position That Rules Methods Out

The Chalk & Talk podcast that pre-dated the Senate testimony by six days was hosted by a math professor. That fact is structurally important and deserves its own analytical treatment. The dynamic this section documents is one instance of the larger credential-deference pattern the Senate hearing executed at policy scale; the math-professor host did not perform the forensic work the paper itself performs because no interview format reasonably expects that work in real time. The point is not that Stokke failed in her role as host. The point is that the credential-deference pattern operates inside disciplines whose own methodological traditions could surface contradictions in real time if the format permitted, and that the pattern's persistence across both interview and Senate-hearing formats is what produces the apparent expert consensus policy actors then cite.

Mathematics pedagogy operates under a foundational methodological standard the discipline has required of every learner since calculus instruction became a generalized educational practice: show your work. The standard is not merely about answer correctness. It is about whether the cognitive process the answer required is visible, evaluable, and reproducible. A correct answer with no work shown does not show learning. The work is the learning. The methodological discipline of producing legible reasoning traces is what mathematics education trains. Method governs outcome. Process accountability is named (the student must own the visible reasoning) and outcome accountability is named (the teacher must validate the visible reasoning). The full three-part standard this paper proposes for tool deployment in learning environments is what mathematics pedagogy has operationalized as its foundational discipline for generations.

The host of the podcast is a mathematics professor. She works in the discipline whose own methodological tradition refutes the position her guest is delivering. She introduces him as a "cognitive neuroscientist, educator, and best-selling author." She tells him his book is "a great book... a fascinating read... troubling, but it's fascinating and I think it's an important read for any parent or educator." She then proceeds to receive his arguments without the methodological pushback the discipline whose tradition she works in would have grounds to deliver.

Three moments in the podcast deserve specific attention.

First, when Stokke raises the offloading question (podcast, 33:16 onward), she frames it through Conrad Wolfram's position that procedural mathematics can be offloaded to technology so students can focus on creative problem-solving. Horvath responds with the diffuse-thinking-mode argument and the PISA factual-knowledge-equals-creativity finding. His core claim: offloading lower-order knowledge kills the higher-order thinking it was supposed to enable. Stokke's response: "I'm going to be sharing that clip all over the place." She endorses the position. What the position rules out, in the form Horvath delivers it, is exactly the methodological reasoning her own discipline has refined

for generations. Method-governed practice (which can include technology in supervised, accountable, outcome-validated deployment) is the cognitive-research-supported answer to the offloading question. Wolfram is not entirely wrong (offload some procedures to free cognitive bandwidth for higher-order work) and not entirely right (knowledge fluency does support creative problem-solving). The methodologically careful answer is method governance: structure the deployment so cognitive demand stays on the learner where it produces learning, and offload only what the cognitive task does not require the learner to construct. The math-professor host endorses the position that rules out this answer.

Second, when Stokke raises Anki and other spaced-repetition tools (podcast, 20:32 onward), she correctly identifies that for university students such tools can be useful and questions whether they work for grade-four students. Horvath responds with the three categories where edtech "actually works" (intelligent tutoring, learning disorder remediation, procedural training) and the magnitude qualifier ("a lot less powerful than people assume"). Stokke does not push back on whether the magnitude qualifier survives Horvath's later removal binary. The contradiction between podcast-Horvath's three-categories concession and Senate-Horvath's verbatim rule-out remains unaddressed in the conversation because the math professor does not surface it. The discipline that requires "show your work" at the foundation of its pedagogy does not require Horvath to show his work on this contradiction.

Third, when Horvath delivers the methodological-universality claim ("All human beings learn in the exact same way") immediately followed by the methodological-precision claim ("When you match pedagogy to the content, every student learns better"), Stokke does not flag the internal contradiction. Both claims cannot operate simultaneously without producing the methods-governance position Horvath spends the rest of the podcast and the entire Senate testimony arguing against. The math professor lets the pair of claims pass without examination.

This is not a critique of Anna Stokke personally. She is operating in a credentialed-deference context that the paper has documented as the structural pattern at the Senate hearing. A math professor hosting a cognitive neuroscientist with a book release on the question whether classroom technology harms learning is operating in a context where the speaker carries the credential authority on the cognitive-mechanism question. The host carries the credential authority on the discipline-pedagogy question. The two credentials should produce the methodologically careful conversation the discipline is capable of generating. They do not. The cognitive neuroscientist delivers the position. The math professor endorses it. The methodological discipline that should have surfaced the contradictions remains unspoken.

This is the inversion executed inside the discipline whose own methodological tradition refutes the position being endorsed. Section 7 names the inversion at the level of the academic establishment generally. The math-professor endorsement names it at the level of the specific discipline whose

foundational pedagogy ("show your work") is the operational instance of the principle the paper advances. The discipline that has trained its students for centuries to make their reasoning visible, evaluable, and reproducible endorses a position that rules out making the deployment of learning tools visible, evaluable, and reproducible. The same methodological principle, applied to claims, has governed mathematics education since the discipline existed. Applied to tools, the principle vanishes from the conversation between two credentialed actors who both have professional training in the principle.

The pattern this section documents is not specific to Stokke or to mathematics. It is the pattern that produces the panel compounding the previous section described and that the paper expects to find when it examines other credentialed-discipline endorsements of removal-binary positions. The discipline does not have to apply its own methodological standard to its endorsements of tool-removal arguments. Until it does, the cognitive research base will continue to be cited in support of conclusions the cognitive research base does not support, by credentialed actors who have professional training in the methodological discipline that would refute the conclusions if it were applied.

Mathematics education is a particularly clean instance of the pattern because the discipline's own methodological standard is so explicitly named and so widely operationalized. Other disciplines (physics pedagogy, science education broadly, language arts instruction) carry similar methodological traditions. The endorsement pattern this section documents probably operates similarly in those disciplines when their credentialed practitioners host or interview tool-removal advocates. The paper does not claim to have evidence of those parallel cases. It claims that mathematics education provides the cleanest single instance because the discipline's foundational standard is the same standard the paper advances at the policy level. When that discipline endorses the position that rules out the standard, the failure is documented in the discipline's own pedagogical record.

9. Where Horvath Is Right and Where He Is Wrong

Horvath is right about the problem. Unstructured passive deployment of digital tools in classrooms correlates with worse cognitive outcomes. The data he cites on this is real and directionally supported across multiple studies. The 1:1 device rollouts of the COVID era, the screen-time saturation of K-5 classrooms, the displacement of analog practice with platform-aligned consumption: these are real failures and they have real cognitive consequences. The author does not dispute the diagnostic finding.

Horvath is wrong about the cause. He attributes the failure to the medium. The cognitive research supports attributing the failure to the deployment method, with the medium acting as a constraint and affordance rather than as the determinative variable. The same screen used in different methods

produces different outcomes. The same passive method delivered through different media produces the same outcome. The variable is method.

Horvath is wrong about the solution. Removal restores the analog method, which is itself often passive (lecture, assigned reading, worksheets). Removal does not address the method failure that produced the outcome he correctly diagnoses. It substitutes one passive medium for another and predicts the outcome will improve because the medium changed. The cognitive research does not support this prediction.

Horvath is wrong about the mechanism. Biological determinism applied honestly would predict no variance in cognitive outcomes across deployment contexts of the same tool. The same screen would produce the same outcome regardless of how it was used, because biology does not change with context. The variance documented across studies of the same tool used in different methods refutes the biological-determinism framing. If biology determined the outcome, there would be no variance to document.

Horvath is wrong about the standard. He applies a high evidentiary bar to EdTech (independent replicated outcome research, longitudinal data, mode-equivalence validation) and then violates that bar by aggregating sixty years of disparate technologies under one claim, citing one researcher's quoted dismissal as if it constitutes consensus, and presenting biological determinism as established mechanism while citing literature that establishes only context-dependent distraction effects. The standard he demands of others, he does not meet himself.

The methods-governance position Horvath should have defended is the position his own written recommendations gesture toward and his own cited research base supports. He did not defend it. He delivered the unhedged version that closes off the methods conversation entirely.

10. The Data Problem: WEIRD Bias At Both Ends Of The Period Under Examination

The 2010 inflection point Horvath identifies is real. Standardized cognitive measures across WEIRD populations show stagnation or decline starting around that time. The PISA, TIMSS, and PIRLS data Horvath cites all show this pattern. The cognitive decline is documented.

What is also documented is that 2010 is the year the WEIRD critique began to reshape the social sciences. Henrich, Heine, and Norenzayan published the foundational paper "The weirdest people in the world?" in *Behavioral and Brain Sciences* that year. The critique argued that the populations on which the social and behavioral sciences had built their findings (Western, Educated, Industrialized, Rich, Democratic) were systematically unrepresentative, and that conclusions drawn from them did not generalize to humans broadly.

The cognitive measurement instruments documenting the decline Horvath cites were developed within and validated against WEIRD populations. The inflection point at 2010 coincides with the publication and uptake of the critique that questioned whether those instruments measure what they claim to measure across populations.

The continuing accumulation of evidence on WEIRD measurement bias since 2010 strengthens this concern beyond the timing coincidence. Atari and colleagues' 2023 preprint "Which humans?" posted at PsyArXiv via OSF documented that approximately ninety percent of psychological research samples continue to draw from populations that constitute roughly twelve percent of humanity, and that the moral and cognitive findings derived from those samples do not replicate cleanly across non-WEIRD populations. The 2010 critique did not resolve in 2010. The bias pattern has continued to accumulate empirical documentation across the entire period during which Horvath's correlation between EdTech adoption and cognitive decline operates. The measurement instruments, the normative cognitive benchmarks, and the population-validity assumptions underlying the decline data Horvath cites are all under sustained methodological scrutiny that the hearing did not address. This does not prove the decline is measurement artifact; it means causal inference from cross-year, cross-population cognitive-instrument comparisons carries an unresolved measurement-validity constraint that any policy built on those comparisons inherits.

The 2023 wave of generative AI deployment is itself a WEIRD-data event. Large language models are trained on overwhelmingly WEIRD-sourced text. The cognitive benchmarks used to evaluate them are WEIRD-validated. The educational AI products now being deployed to classrooms inherit the same population-bias structure as the cognitive measurement instruments documenting the decline that EdTech is being blamed for. The 2010 measurement question and the 2023 AI deployment question are connected through the same continuous WEIRD-bias problem. The cognitive yardstick changed. The technology changed. The training data is WEIRD. The benchmark data is WEIRD. The correlation Horvath cites is between WEIRD-validated measures of WEIRD populations adopting WEIRD-trained tools, all measured against WEIRD-developed benchmarks. The methodological discipline required to disentangle which variable is producing the decline does not exist in the testimony.

This produces an alternative causal possibility the hearing did not address. The 2010-onward cognitive decline could reflect what Horvath claims: digital technology adoption changed how children learn and the instruments captured the change. It could also reflect that the instruments themselves were under increasing methodological scrutiny across the entire decade, that revisions and refinements reflected the WEIRD critique, and that the apparent decline is in part an artifact of the instruments being revised to measure what they had previously failed to measure. Both possibilities are consistent with the data. The hearing addressed neither.

The methodological mechanism by which WEIRD bias undermines Horvath's causal inference is specific. WEIRD-validated instruments systematically mis-measure cognitive constructs in non-Western populations because the underlying conceptual operationalization (what counts as attention, what counts as memory, what counts as reasoning under time pressure) was developed within a narrow cultural frame and exported as universal. PISA, TIMSS, and PIRLS carry that frame in their item construction, response formatting, and scoring rubrics. The post-2010 demographic shift in PISA participation toward broader inclusion of non-Western and non-Anglophone education systems means that cross-year PISA comparisons are not stable comparisons of the same construct over time. They are comparisons across populations whose relationship to the underlying instruments has been changing. Horvath presents the cross-year score change as cognitive decline. The methodological literature treats it as a measurement-validity question that the score change cannot resolve on its own. Federal-policy-grade testimony built on cross-year PISA comparisons inherits the unresolved measurement question whether the testimony surfaces it or not.

The 2022 PISA results Horvath cites also show that the six top performers on the mathematics assessment were Hong Kong, Macao, Taipei, Singapore, Japan, and South Korea. All six are high-digital-infrastructure education systems that do not show the decline pattern Horvath attributes to digital technology adoption. East Asian education contexts include substantial non-screen variables (after-school tutoring infrastructure, exam-preparation culture, instructional time, parental academic involvement). The screen variable cannot account for the outcome variance across systems with comparable digital infrastructure but divergent cultural and instructional contexts. The WEIRD critique cuts both ways: Western data cannot be universalized, and Eastern data cannot be cited as a clean refutation either. Both populations carry methodological qualifications any honest analysis must hold.

The honest reading is that we have a documented measurement-bias pattern operating at both ends of the period under examination, with continuous empirical accumulation since 2010 and a 2023 AI deployment that inherits the same bias structure. The correlation Horvath presents as established causation rests on a measurement foundation under sustained methodological challenge across the entire period. Policymakers building federal-grade legislation on the testimony are building on a measurement foundation the testimony did not surface and the hearing did not examine. The data problem is not "competing hypothesis to consider." The data problem is "the foundation under the data has been documented as biased for fifteen years and the hearing acted as if the documentation did not exist."

11. The Causal Error Runs Deeper Than the Evidence Problems

The deeper failure is the causal-attribution failure. Horvath observes correlation between digital technology adoption and cognitive decline measures. He attributes the correlation to the medium. The cognitive research supports attributing it to the deployment method, with the WEIRD critique adding that the underlying measurement may itself be partly artifact.

Affordance theory and the cognitive-architectural critique advanced in work like Carr's *The Shallows* are real: digital media carry design properties that pull behavior toward skimming, distraction, and shallow processing. The argument here is narrower. Tool affordances are a real constraint that governance must address, not a determinism that governance cannot override. Internal practitioner data illustrates the difference: the same AI platform produced a 21-point difference in measured collaborative-intelligence scores when administered against a static document versus inside a governed conversation with the same subject on the same day. The tool was identical. Context produced the variance. That is the operational signature of method governance dominating tool affordance, not the signature of tool neutrality and not the signature of biological determinism.

Removing screens does not change the deployment method. If the method is passive delivery, removing the screen returns the classroom to passive delivery through a different container. The cognitive outcome stays. Nothing changes because the method never changed.

The Causal Error compounds the Evidence Problems because it makes the evidence look stronger than it is. If you believe the medium causes the outcome, then any correlation between medium and outcome looks like causal evidence. If you understand that method governs outcome and medium is a carrier, then the same correlation looks like measurement of unstructured deployment in WEIRD populations during a period when the measurement instruments themselves were being revised. The same data, read through the methods lens, supports a much more modest conclusion than the binary the hearing delivered.

12. The Five Myths as Misattributed Failures

Horvath's book and oral testimony together identify what he calls the five myths of EdTech: that technology is engaging and engagement is learning, that kids learn better through their preferred medium, that Duolingo-style platforms produce real proficiency, that kids learn best on their own, and that technology prepares students for the future. He argues each is false.

The five myths are real failure modes of unstructured passive deployment. Each is correctly diagnosed. Each is misattributed.

Myth One (engagement equals learning) is a passive-deployment failure. Engagement metrics are commercial-design metrics. Optimizing for engagement produces the dopamine-hit pattern Radesky

correctly identified. Method governance addresses this by requiring outcome metrics rather than engagement metrics, regardless of medium.

A related counter-argument is worth pre-empting because it commonly surfaces alongside the screens-harm-learning position. The argument runs: screens are uniquely addictive, addiction is structural rather than methodological, and therefore method governance cannot address what is fundamentally a medium-level problem. The response is that addiction framing is itself a design-governance question, not a medium-essence question. Engagement-optimized design produces compulsive use patterns whether the medium is a screen, a textbook engineered for compliance and reward, a gamified curriculum, a casino floor, or a social environment built around reinforcement schedules. The same addiction mechanisms have been documented across non-screen media for decades. What the engagement-optimized design has in common across media is that the design is built to extract attention rather than to develop cognition. Method governance addresses this by requiring outcome metrics, named accountability, and design transparency for any tool deployed in a learning environment. The variable remains design intent and deployment method, not the existence of a screen. A screen designed for active cognitive demand and governed by outcome accountability does not produce the addiction patterns the counter-argument cites. A textbook designed for compliance and gamified reward without outcome accountability does. The medium does not determine the outcome. The design intent and the governance structure do.

Myth Two (preferred medium equals better learning) is a method-failure misattributed to medium choice. Students who report preferring screens have learned passive consumption habits from passive deployment. The preference reflects the deployment history, not a property of the medium.

Myth Three (Duolingo learning) is partially correct. The peer-reviewed outcome literature on Duolingo (Smith, Jiang, and Peters 2024 in *Language Learning and Technology*; Jiang, Peters, Plonsky, and Pajak 2024 in *CALICO Journal*; Jiang and Loewen 2021 in *Foreign Language Annals*) documents measurable proficiency gains on platform-aligned instruments. Transfer to unprompted conversational use, long-term retention without continued app exposure, and free-conversational competence remain open questions. The gamification-versus-transfer-fluency debate within applied linguistics is active and unresolved. Reader transparency requires noting that at least one author of the cited studies holds a documented Duolingo affiliation: Bozena Pajak, fourth author of the 2024 *CALICO Journal* paper, is Vice President of Learning and Curriculum at Duolingo per Duolingo corporate communications and her own published professional record. The studies were peer-reviewed by independent journal review processes. The honest reading is that Duolingo under specific conditions produces measurable gains on specific instruments, and reducing the platform to "passive entertainment" is methodologically careless when the literature documents the bounded gains.

Myth Four (kids learn best on their own) is a Vygotskian scaffolding question. Horvath is right that unsupervised self-directed learning produces inferior outcomes for most students. He is wrong to imply that the alternative is whole-class teacher-led instruction at one pace calibrated to administrative convenience. A governed AI interaction that places active cognitive demand at the individual learner's pace can be closer to the scaffolding zone of proximal development than whole-class passive instruction. The governance question is method, not medium.

Myth Five (technology prepares students for the future) is a workforce-readiness claim. Horvath argues digital literacy declined 22 percent despite increased device use, and that uncritical device deployment does not build competency. Correct. The removal prescription defeats the legitimate version of the preparation argument by the same mechanism Horvath's transfer distinction identifies. Students who develop skills in governed high-demand institutional contexts transfer those skills to less governed professional environments. Students protected from the environment they will inhabit must make the additive leap alone, at eighteen, with no institutional support. Removal produces the additive transfer failure Horvath correctly identifies as the harder challenge.

The five myths together constitute the most complete available case for method governance as the operative variable. They document five ways passive deployment fails. They do not establish that governed structured deployment fails by the same mechanisms, because that question was never asked. The book builds the evidence for this paper's argument and then draws the wrong conclusion from it.

13. The Standard Horvath Should Have Defended Is His Own Discipline's Standard

The institutions responsible for education face a specific and testable governance obligation. Before deploying any tool in a learning environment, the institution should be able to show three things.

First, that the deployment method places active cognitive demand on the learner, requiring construction, evaluation, and judgment rather than passive reception.

Second, that the institution has evidence that the deployment method produces the cognitive outcome it claims to produce, including evidence of retention beyond the immediate task, transfer to related contexts, and performance when the tool is removed.

Third, that a named human holds accountability for the cognitive outcomes of students in their care, with the authority to modify or reject any deployment that fails to meet the first two conditions.

This standard is not novel. It is the standard Horvath's own discipline has required of every claim it makes for as long as the modern research university has existed. Active cognitive demand is the foundational pedagogical principle. Outcome evidence is the foundational research-methods principle. Named human accountability is the foundational peer-review principle. The three-part

standard is the discipline's own standard, transposed from the governance of academic claims to the governance of tool deployment in learning contexts.

This standard applies to AI tools, tablets, textbooks, and human teachers equally. Senator Hickenlooper asked for it. No witness provided it. The January 2026 hearing is now in the congressional record as the session where the discipline's own pedagogical standard was placed on the table, left unanswered, and displaced by device-access legislation.

Horvath's written testimony contains four of the seven recommendations that, taken together, approximate this standard. He had the better position available. He wrote it. He submitted it. He then ruled out the methods alternative by name in oral testimony at C-SPAN 19:10, foreclosing the discipline's own standard as a possible solution. The version that traveled was the version without it. The book and the written testimony each end with the disclaimer line that allows defenders to point back to the governance recommendations when challenged. The oral testimony delivers the binary that the mechanism claim actually supports. The strategic ambiguity is structural. The rule-out is verbatim. The discipline's own standard is the standard Horvath ruled out by name. The policy consequences are propagating.

14. What This Paper Claims and Does Not Claim

This paper claims that Horvath's oral testimony delivered biological determinism that contradicts the cognitive research base he claims to draw from, and that he is wrong while actively shaping policy. It claims that his written testimony and book each carry the same biological-determinism mechanism with hedge language appended that allows strategic ambiguity. It claims that the panel surrounding him drifted in parallel from their own published positions toward a shared binary, generating apparent expert consensus that policy actors are now citing. It claims that the data Horvath cites is open to a competing causal explanation through the WEIRD critique that the hearing did not address. It claims that the cognitive research base supports a methods-and-governance position that none of the witnesses delivered cleanly.

This paper does not claim that Horvath is acting in legal-grade bad faith. It does not claim that the seven governance recommendations are insincere. It does not claim that the cognitive decline he identifies is fabricated. It does not claim that screens are harmless or that any deployment is acceptable. It does not claim that the author's own RECCLIN framework or HEQ instrument are validated at population scale; both are explicitly small-N hypothesis-generating evidence with formal validation in progress.

It does claim that titles, academic credentials, and institutional positions should be challenged at each turn, especially when the proposed policy outcome is binary. It does claim that the cognitive research the panel invoked supports a more methodologically careful position than any panel member delivered. It does claim that AI is a mirror, and what AI reflects is the strategic ambiguity, the

unverified citation chains, and the credential-deference patterns of the human institutions that built it. The hallucination is not the AI. The hallucination is what AI was trained to produce by the human institutional record it was trained on.

15. Federal Policy Consequences and the Missouri Case

The Senate Commerce Committee hearing was constructed to advance federal legislation. The Kids Off Social Media Act (KOSMA), reintroduced by Senator Cruz and Senator Schatz, was the primary federal vehicle the hearing's evidentiary record was built to support. The hearing also addressed federal EdTech procurement standards and the E-Rate program. Senator Markey defended the existing programs in the record. Senator Cruz proposed restrictions. The federal policy fight is the primary track the testimony directly fed.

State-level effects are documented secondary effects. Missouri House Bill 2230, the Student Screen-Time Standards Act, passed the Missouri House 143-10 on March 30, 2026 and moved to the Missouri Senate. Public-record witness testimony before the Missouri House Elementary and Secondary Education Committee shows that the Child First Policy Center, in their submitted testimony in support of the bill, cited Horvath specifically by name and quoted the biological-mechanism framing from his book *The Digital Delusion* ("Learning doesn't arise from the brain alone; it emerges from the rhythm, movement, and sensations of our entire physical selves") alongside the unhedged 80-countries claim from his Senate oral testimony ("Across 80 countries... if you look at the data, once countries adopt digital technology widely in schools, performance goes down significantly"). The hedged seven governance recommendations from his Senate written testimony do not appear in the cited testimony. The book's biological mechanism and the Senate's unhedged 80-countries finding are the elements that reached the policy actors. The author reads this pattern as the strategic-ambiguity dynamic this paper documents operating in the legislative record: the unhedged versions traveled to policy citation while the hedged versions remained available in the artifacts where they could be invoked when the position was challenged.

The Joint Committee on Education hearing also heard testimony from Dr. Maryam Mohammadkhani, a Harvard-trained physician and Springfield school board member, who delivered the line "Learning from a computer is not biologically compatible with the way we are designed." This is the same biological-determinism mechanism Horvath delivered at C-SPAN 19:10, restated by another credentialed witness in a state-level legislative hearing four months after the Senate hearing. The credential-deference pattern this paper documents at the federal level is documented at the state level too. The Missouri case is not just downstream evidence of the strategic-ambiguity pattern; it is downstream evidence that the biological-determinism mechanism Horvath ruled methods governance out by name in front of the Senate is being restated by other credentialed actors and accepted by lawmakers as a basis for binding policy.

Other state debates are pending. The Missouri case is not the headline policy consequence; the federal KOSMA track is. The Missouri case is the documented illustration that the strategic-ambiguity dynamic this paper identifies has measurable, traceable, primary-source-verifiable downstream effect on bills moving through the legislative process.

The federal effect is harder to measure because federal legislation moves slowly and many factors shape it. The state effect in Missouri is clean: legislators cited the testimony and the book by name in committee, and the bill passed. If similar citations appear in other state legislative debates over the next twelve months, the state-level propagation will be the most rapid and traceable consequence of the dynamic this paper documents.

16. AI Is a Mirror

The author has documented elsewhere that AI systems carry WEIRD bias as a structural feature of their training. The published piece "AI as a Mirror to Humanity: Do What We Say, Not What We Do" (Puglisi, 2025) drew on Henrich, Heine, and Norenzayan's foundational 2010 paper documenting that 96 percent of subjects in top psychology journals came from Western industrialized populations representing 12 percent of humanity, and on Atari et al. (2023) showing that GPT-4 responses correlate above 0.70 with WEIRD populations and weakly or negatively with non-WEIRD populations. AI is a stochastic mirror of the institutional record it was trained on. The bias is not random. It is structural.

That argument applies directly to the Horvath case. The cognitive science research base Horvath cites was produced overwhelmingly within WEIRD academic institutions. The standardized cognitive measurement instruments documenting the 2010 decline were developed within and validated against WEIRD populations. The 2010 inflection point Horvath identifies as evidence of EdTech harm coincides with the publication of the WEIRD critique that questioned whether those instruments measure what they claim across populations. The hearing format then surrounded Horvath with three additional witnesses trained in the same WEIRD academic system, each drifting from their own published positions toward a shared binary that the WEIRD framework shapes. The hearing produced WEIRD-aligned consensus on a question the WEIRD measurement system may itself be confounding.

The mirror reflects what the institution produced. Horvath delivered biological determinism citing cognitive research that does not support biological determinism. The panel signed onto removal-and-age-gating prescriptions while their own published research pointed in different directions. Policy actors observing four credentialed witnesses agreeing on removal reasonably concluded that expert consensus supports removal. The consensus is real at the level of stated oral policy positions. It is absent at the level of the witnesses' own research records, and it sits on a measurement system the WEIRD critique calls into question.

The author writes this paper as someone whose primary professional work involves multi-platform AI collaboration across eleven platforms simultaneously as a documented methodology. The Mirror article tested nine platforms on a stress-test question (gender and family policy) chosen because it maximally exposes WEIRD bias. Eight platforms approved the findings under governance pressure. One platform (Kimi) maintained adversarial rejection across fourteen responses while acknowledging the methodology was sound and the data was accurate. The case study established that single-platform reliance perpetuates bias inheritance and that multi-platform governance with human arbitration surfaces evidence single platforms suppress.

The author's RECCLIN framework and HEQ instrument are one operational response to this mirror problem in one practitioner context. They are not the answer for all contexts or all aspects of human-AI collaboration. If the cognitive science supports method governance, then the AI tools that mirror cognitive science can be governed by method, and many different practitioners working in many different domains will build many different implementations of that principle. The author's work is one such implementation. The same large language model that produces a sycophantic, low-cognitive-demand interaction under default consumer use produces a structured, source-cited, dissent-aware collaboration under method governance. The framework is testable. The instrument tracks four dimensions across structured use. The 2025 cross-platform feasibility study, the n=10 cross-user testing, and the four-instance practitioner record are documented. Formal psychometric validation is in progress. This is small-N hypothesis-generating evidence offered to show that the principle is implementable in at least one context, not population-scale proof that any specific implementation produces predicted outcomes across contexts.

The danger the Mirror article documented is the danger the Horvath case shows at federal scale. Most adopters of AI do not know the bias exists. Most organizations deploy AI without governance. Most users rely on single platforms. The same pattern operates in expert testimony deployed before legislative bodies. Policy actors do not know the WEIRD measurement bias exists. Hearings deploy expert witnesses without methodological cross-examination. Legislators rely on the consensus visible in the room rather than on the divergent research records the witnesses individually produced. The structural bias compounds because no one in the chain is checking whether the testimony engaged the full evidence base or only the portion that aligned with the WEIRD academic frame the witnesses were trained in.

AI is a mirror of human institutional patterns. The Horvath testimony is a mirror of what the cognitive-science academic institution produces under hearing-format pressure. Both mirrors reflect the same WEIRD inheritance. Both require governance to surface what the mirror suppresses. The methods-governance principle this paper advances is not specific to AI. It is the same principle the Mirror article advances and the same principle institutional accountability has always required: named human arbitration with the authority and discipline to challenge what the system surfaces by default.

17. Closing

Horvath's oral testimony is contradictory of cognitive development research, contradictory of the theoretical foundations he claims to draw from, and contradictory of his own written work. The viral video is the C-SPAN clip's circulation reproducing the very dynamic the panel was warning about: the attention economy rewarding the simplest version of the most credentialed claim from the most credentialed witness in the format that selects for it.

We have a data problem. People are pulling data they had no part in collecting and manipulating it for arguments the data does not support. The data review and evaluation are easily challenged. The data collection itself may have been flawed, particularly across the 2010 WEIRD-critique inflection. We are blinded in public discourse and policy discourse by data and by those who would stand in front of us with titles and academic merits built on and within a WEIRD measurement system. We are led down a path of human drift (moving away from one's own stated positions in delivery) and human hallucination (citing research bases to support claims the research bases do not support).

AI is a mirror. The hallucination AI is accused of producing is the hallucination its training corpus contained. The drift AI is accused of producing is the drift its training corpus modeled. It came from us, from the institutional record we built and then trained machines to reproduce.

The answer is to realize that no one is one hundred percent right. The author doubts most credentialed claims are even ninety percent right. Titles and academic merit should be challenged at each turn, especially when the proposed outcome is binary. A binary policy answer to a multi-variable cognitive question is a signal that drift has occurred. A credentialed expert delivering a binary answer in a format that rewards binary answers is the signal that hallucination is operating. The corrective is not to dismiss credentials. The corrective is to require that credentialed claims survive the same evidentiary scrutiny they demand of others, that internal contradictions in published records be surfaced rather than allowed to function as deniability, and that the cognitive research base be cited honestly to support the conclusions it actually supports.

The methods-and-governance position the cognitive research supports is implementable. The author's own work shows implementability at small scale. Population-scale validation is the work in progress. The Senate hearing of January 15, 2026, was the moment when the governance question entered the federal record and was answered with biological determinism instead of methods. The policy consequences are now propagating. The mirror is reflecting back what we put into it. What we do next determines what gets reflected in the next cycle.

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Note on oral-testimony sourcing: Direct quotations attributed to Horvath, Hickenlooper, Cherkin, Twenge, and Radesky throughout this paper are drawn from the C-SPAN video record of the January 15, 2026 hearing (linked below). Load-bearing quotes carry inline timestamps in the format (C-SPAN, HH:MM) referenced to the C-SPAN player's timecode display. The viral YouTube clip of Horvath's complete oral opening statement is also linked. The full C-SPAN transcript with synchronized timecodes is the authoritative source for any quote not individually timestamped.

Note on podcast sourcing: Direct quotations attributed to Horvath and Stokke from the January 9, 2026 Chalk & Talk podcast appearance are drawn from the publicly available YouTube episode transcript (linked below). Load-bearing quotes carry inline timestamps in the format (podcast, MM:SS-MM:SS) referenced to the YouTube player's timecode display. The full episode is the authoritative source for any quote not individually timestamped, and the timestamps allow any reader to verify the quotations directly against the source recording.

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A Note On What This Paper Is

This paper is not a hit piece on Jared Cooney Horvath. It is a dissection of how a credentialed claim travels faster than the research it claims to represent. Horvath happens to be the current person whose testimony is being used to shape federal and state policy on technology in classrooms, and whose oral statement is currently circulating in viral form with more than two million views. The paper exists because that testimony is doing policy work right now, on a methodological foundation his own written testimony, his own book, and his own cited research base do not support. If a different credentialed witness with a different viral clip were doing the same policy work on the same kind of methodologically incomplete foundation, the paper would examine that case instead. The case is not about the man. It is about what he said, what he wrote, and what he argues for being a contradiction of the research and practices he is making statements about.

But there was a moment that shifted the author's posture from methodological analysis to something more personal, and honesty requires surfacing it. The Chalk & Talk podcast closes with Anna Stokke referencing Horvath's call to action at the end of *The Digital Delusion* to stand up to edtech in schools. Horvath responds in his own voice: "Yeah. And let's do it. Tech companies aren't going to suffer, man. If they don't have their fingers in our kids' schools, they're still going to be just fine. They don't need the kids. No, they got nothing to worry about. They can take everything else. Leave the kids alone." Stokke responds: "Bingo." Horvath then says: "I'm just hoping to get the book out far and wide." The author had been treating the paper as analysis of policy and methodological failure. The closing exchange surfaced something the methodological frame alone does not capture. A credentialed cognitive neuroscientist personally endorsing wide distribution of a book whose call to action conscripts the audience into tool-removal advocacy, framed as protecting children from tech companies while everywhere-else-is-fine, with a math-professor host responding "Bingo" and the speaker explicitly asking for far-and-wide distribution, is the dynamic the paper documents structurally captured in a single passage. The methodological failure became personal alarm at watching the scaling vector operate in real time. The author cannot un-see it. The paper still treats Horvath methodologically rather than personally, but the author's reaction to that closing exchange is part of the disclosure record this note exists to surface.

That said, honesty requires the author to surface the opinion this paper is built around rather than pretend the analysis arrived at it neutrally. The author was first introduced to Horvath's work through the five-minute viral clip. Something about it screamed wrong. The research did not support the claim, the binary close did not match the cognitive science the speaker was invoking, and the methodological move from correlation to evolved-biology-as-mechanism was not the move the underlying literature licenses. The deeper the investigation went, the harder it became to remain neutral. The written testimony contradicted the oral. The book contradicted the oral. The podcast six days earlier contradicted the oral. Each layer of the source material, examined directly, made the position less defensible rather than more. The author concludes that Horvath's public position does

not account for his own written record or for the methods his discipline operates under. Stating it plainly: he is wrong. He is wrong in a way that matches the threat social media has become, where viral inaccuracy can be dressed up as professional and credible because the credentials that produced it are real and the format that distributes it rewards the simplest version of the most credentialed claim. The paper exists to refuse that dressing-up. The methodological discipline this paper applies to its analysis is the same discipline the cognitive science Horvath cites has required for as long as it has been a discipline. Applying that standard, his testimony fails. The author's opinion is not separate from the analysis. It is what the analysis produced when the author followed the source material honestly to where it went.

Side note on correlation versus causation, because the methodological point bears stating in plain terms. Gen X and Gen Z grew up under fundamentally different policy environments, economic conditions, family structures, post-2008 economic disruption, mental-health support systems, parental work patterns, and cultural contexts. None of these are screen variables. None of them are controlled for in the testimony's correlation analysis. Failure to control for them is methodologically equivalent to using the correlation between ice cream sales and drowning deaths to argue that ice cream causes drowning. The correlation is real. Both rise in summer. Weather, environment, and many other factors are at play. An increase in ice cream sales does not cause an increase in drownings. Neither variable causes the other. Both are produced by the same underlying environmental conditions. To argue otherwise is to confuse correlation with causation in a way that policymakers building federal-grade legislation should not be expected to evaluate without methodological help. The testimony provides the correlation and asserts the causation. The methodological discipline that should have surfaced the missing variables is the discipline the paper has been documenting as absent from the hearing. That absence is the failure. Naming it plainly is the corrective.

#Assisted