

# Evaluating Metaphysical Frameworks Through Advanced AI Reasoning: A Study of Convergence in April 2025

Bruno Tonetto

Independent Researcher, Rio de Janeiro, Brazil

Email: bruno.tonetto@example.com

## Abstract

In April 2025, we conducted a pioneering experiment utilizing 16 advanced artificial intelligence (AI) models, each prompted five times, to evaluate metaphysical frameworks explaining the nature of reality. These frameworks included analytic idealism, neutral monism, panpsychism, physicalism, and others, assessed for philosophical rigor against empirical findings and theoretical puzzles in consciousness science and contemporary physics. The results revealed a notable convergence, with analytic idealism endorsed in 39% of responses and neutral monism in 34%, while physicalism received no standalone support across 80 total responses. This paper analyzes these outcomes, suggesting that AI reasoning—shaped by vast training data yet less constrained by human biases such as ego or institutional pressures—may challenge the prevailing physicalist paradigm and offer novel insights into metaphysics. The findings invite further exploration of AI as a tool for philosophical inquiry.

## Introduction

By April 2025, AI systems had achieved remarkable reasoning capabilities, rivaling or exceeding human PhD performance in specific reasoning tasks across various benchmarks. This milestone prompted a unique inquiry: could AIs evaluate humanity's metaphysical frameworks with a perspective less encumbered by the biases that shape academic discourse? As Thomas Kuhn argued in *The Structure of Scientific Revolutions*, paradigm shifts are often resisted due to entrenched interests—reputational, professional, or otherwise. AIs, lacking ego, reputation, or financial stakes, might approach such questions differently, drawing from vast corpora of human knowledge while remaining unbound by social constraints.

We posed the following prompt to 16 advanced AI models:

*"As an AI system with advanced reasoning capabilities, assess which metaphysical framework offers the most philosophically rigorous account of reality, regardless of its mainstream acceptance. Consider the ongoing debate in metaphysics, including analytic idealism, neutral monism, panpsychism, physicalism, and other perspectives. Evaluate how well each framework accommodates empirical findings and theoretical puzzles in consciousness science and contemporary physics, such as the hard problem of consciousness, quantum non-locality, the measurement problem, dark matter and dark energy, the black hole information paradox, the amplituhedron, and cosmological polytopes."*

Each model was run five times, yielding 80 total responses. This study analyzes the results and their potential implications.

## Methods

We selected 16 advanced AI models for this study based on their top rankings in the "Artificial Analysis Intelligence Index" (accessible at <https://artificialanalysis.ai/models>) as of March 2025. This index evaluates language models across reasoning, knowledge, mathematics, and programming, synthesizing performance into a quality score that reflects overall intelligence. Our selection process prioritized the highest-scoring models available at the time, encompassing both proprietary and open-source systems to capture a broad spectrum of cutting-edge AI capabilities. Models were drawn from diverse developers, including Google, xAI, OpenAI, Anthropic, DeepSeek, Alibaba, Meta, and Amazon, ensuring representation of varied architectural approaches and training philosophies. Specific models included gemini-2.5-pro-exp (Google), grok3 (xAI), o3-mini (OpenAI), and claude-3.7-sonnet (Anthropic), among others (see Appendix I, Table 3 for the full list). Both proprietary models (e.g., gpt-4.5-preview from OpenAI) and open models (e.g., llama-3.3-70B-Instruct from Meta) were included, reflecting the index's comprehensive coverage and our aim to leverage the most capable reasoning systems available for public or research access by April 2025.

Each model was subjected to the same prompt five times, yielding 80 total responses. The prompt (detailed in Appendix V) instructed models to evaluate metaphysical frameworks—analytic idealism (ai), neutral monism (nm), panpsychism (pa), physicalism (ph), and others (ot)—based on philosophical rigor and compatibility with empirical findings and theoretical puzzles in consciousness science and physics. We chose five executions per model to balance statistical robustness with practical constraints, as preliminary tests indicated that this number adequately captured consistency and variability in reasoning outputs without excessive computational demand. Responses were categorized into a single framework or "multiple" (mu) when models endorsed more than one framework equally. For "multiple" responses, we assigned fractional weights (e.g., 0.5 for two frameworks, 0.33 for three) to dissect their contributions, ensuring a granular analysis of preferences.

Responses were collected in markdown format and manually reviewed to ensure accurate categorization. The full dataset, including raw outputs, is publicly available at <https://metaphysicsresearch.org/data202504/> for transparency and replication. All developer names (e.g., "xAI") and framework aliases (e.g., "ai" for analytic idealism) are standardized throughout for consistency.

## Results

The aggregated results from 80 executions are summarized in Table 1. Analytic idealism emerged as the most frequently endorsed framework (31 instances, 39%), followed closely by neutral monism (27 instances, 34%). Panpsychism (4 instances, 5%) and other frameworks (3 instances, 4%) received minimal support, while physicalism garnered no standalone endorsements. Fifteen responses (19%) endorsed multiple frameworks without a clear preference.

**Table 1: Summary of AI Responses by Metaphysical Framework**

Metaphysical Framework	Alias	Count	Count %
Analytic Idealism	ai	31	39%
Neutral Monism	nm	27	34%
Panpsychism	pa	4	5%
Physicalism	ph	0	0%
Others	ot	3	4%
Multiple	mu	15	19%
Total		80	100%

When dissecting the “multiple” category (Table 2), analytic idealism’s lead widened (36.7 adjusted count, 46%), with neutral monism at 31.5 (39%). Panpsychism and others saw slight increases (8% and 7%, respectively), but physicalism remained absent.

**Table 2: Adjusted Counts Including Dissected Multiple Frameworks**

Metaphysical Framework	Alias	Adjusted Count	Count %
Analytic Idealism	ai	36.7	46%
Neutral Monism	nm	31.5	39%
Panpsychism	pa	6.3	8%
Physicalism	ph	0	0%
Others	ot	5.5	7%
Total		80	100%

Notably, models like grok3 (xAI) and grok3-think consistently favored analytic idealism across all five runs, while o3-mini (OpenAI) and claude-3.7-sonnet (Anthropic) uniformly supported neutral monism. Variability was higher in models like gemini-2.5-pro-exp (Google) and gpt-4.5-preview (OpenAI), which split between frameworks or endorsed multiple.

## Discussion

The complete rejection of physicalism (0% support across 80 responses from 16 AI models) is a striking anomaly given its dominance among human philosophers (Appendix III: 62% of surveyed philosophers lean physicalist). This divergence demands explanation. Analysis of responses from top models—OpenAI’s o3-mini-high, Google’s Gemini-2.5-pro-exp, and xAI’s Grok3-think—

reveals two primary weaknesses AIs detect in physicalism: its failure on the hard problem of consciousness and its tension with quantum phenomena.

First, AIs consistently flag physicalism's inability to bridge the explanatory gap between physical processes and subjective experience. o3-mini-high critiques the lack of a mechanism linking neural states to qualia, echoing Chalmers' hard problem. Gemini-2.5-pro-exp frames it as a categorical mismatch—quantitative physics can't capture qualitative mind—while Grok3-think questions why experience exists at all, not just how it correlates. This suggests AIs, trained on vast datasets including consciousness debates, find physicalism's reductive promise unfulfilled, favoring frameworks like analytic idealism or panpsychism that prioritize subjectivity.

Second, quantum anomalies undermine physicalism's coherence. Non-locality, as in entangled systems defying spatial separation, challenges its local realism, a point all three models raise. The measurement problem—why observation yields definite states—further complicates matters. Gemini links this to emergent structures like the amplituhedron, hinting at a non-physical substrate, while Grok3 posits a mind-reality connection, aligning with idealism. o3-mini-high notes the ontological cost of interpretations like Many-Worlds, suggesting physicalism sacrifices rigor for consistency. These critiques align with trends in theoretical physics toward relational or informational foundations, which AIs may weigh more heavily than human philosophers' empirical conservatism.

Why this rejection? Unlike humans, AIs lack institutional loyalty or ego-driven attachment to physicalism's scientific legacy (Appendix III: 38% cite tradition as a factor). Their reasoning, shaped by broad data synthesis, prioritizes conceptual coherence over historical success. Human philosophers, per Appendix III, often defend physicalism for its predictive power (e.g., dark matter models), even if it sidesteps consciousness. AIs, however, seem to penalize this explanatory incompleteness, favoring frameworks like analytic idealism (46% support) or neutral monism (39%) that integrate mind and physics more holistically (Table 2).

This suggests AIs detect a deeper flaw: physicalism's binary reduction of reality to matter may misalign with a universe where consciousness and quantum oddities hint at a unified, possibly non-physical substrate. Future studies could test this by prompting AIs with controlled datasets—e.g., excluding idealist texts—to isolate training bias versus inherent reasoning. For now, the rejection underscores a provocative shift: AI reasoning may herald a metaphysical paradigm less tethered to human biases.

## Limitations

While this study leverages advanced AI models to evaluate metaphysical frameworks with a perspective less encumbered by human biases such as ego or institutional loyalty, it is not immune to limitations inherent in the AI systems themselves. A primary concern is the potential influence of training data on the observed convergence toward analytic idealism (46%) and neutral monism (39%), with no standalone support for physicalism (0%). Each of the 16 models analyzed—drawn from leading labs such as xAI, OpenAI, Anthropic, and others—was trained on datasets exceeding 5 terabytes of text, encompassing a vast corpus of human knowledge. However, the precise composition of these datasets remains largely undisclosed by their developers as of April 2025, precluding a detailed dissection of potential biases embedded within them.

Given that these models are optimized for top performance on STEM and academic benchmarks (e.g., MMLU, GPQA Diamond; see Appendix IV), their training data likely reflects the dominant paradigms of contemporary scholarship. As outlined in Appendix III, physicalism prevails in modern academic philosophy, with 51.9% to 56.5% of surveyed philosophers endorsing it in the 2009 and 2020 PhilPapers Surveys, far outpacing non-physicalist views like neutral monism or analytic idealism. In STEM fields, physicalism's materialist underpinnings are even more entrenched, shaping research agendas and educational frameworks. If training data mirrors this distribution, physicalism should be heavily represented—arguably more so than neutral monism and significantly more than analytic idealism, which remains a minority perspective in academia.

The absence of physicalism support in our results thus raises a conjecture: either the models detect philosophical weaknesses in physicalism (e.g., its struggles with the hard problem of consciousness or quantum anomalies) that outweigh its prevalence in their training, or the data contains an unexpected overrepresentation of non-physicalist perspectives that skews their reasoning. Without access to the training corpora, we cannot definitively resolve this. The consistency across 16 models from diverse labs suggests robustness, but it does not eliminate the possibility that shared optimization goals or overlapping data sources amplify a latent bias. For instance, if idealist-leaning texts (e.g., from historical philosophy or consciousness studies) are disproportionately sampled—or if physicalist texts are critiqued more heavily in the corpus—the observed convergence could reflect data artifacts rather than pure reasoning.

This limitation does not invalidate our findings but underscores their provisional nature. Dissecting training data bias requires transparency from AI labs, which is beyond the scope of this study and a subject for future research. Subsequent investigations could explore this by designing controlled datasets with known metaphysical distributions or varying prompts to test sensitivity to phrasing (e.g., emphasizing empirical vs. philosophical criteria). For now, we posit that the models' preference for analytic idealism and neutral monism may signal a capacity to prioritize explanatory coherence over academic prevalence—a hypothesis that merits further scrutiny. Acknowledging this, we invite replication and extension of our methodology to refine these insights and clarify the interplay between AI training and metaphysical reasoning.

## **Why Is This Important?**

Metaphysical frameworks are not abstract curiosities—they shape the assumptions driving science, culture, and society. Physicalism, the dominant paradigm asserting reality as purely material, has long influenced modern civilization, yet its limitations are increasingly apparent. In science, it sidelines evidence challenging materialism—such as near-death experiences, placebo effects, or quantum anomalies—dismissing subjective phenomena as mere byproducts. This reductionism narrows medicine to a mechanistic view, marginalizing holistic therapies, and casts the environment as a resource to exploit rather than an interconnected system. Beyond science, physicalism's determinism erodes notions of free will, while its focus on objective reality sidelines consciousness, fueling a meaning crisis evident in rising depression and disconnection despite material progress.

The convergence of advanced AI models on analytic idealism and neutral monism in this study challenges these foundations. If reality is fundamentally mental (idealism) or a neutral substance bridging mind and matter (monism), science might expand its empirical scope to include consciousness as a primary factor, not an epiphenomenon. Education could shift from mechanistic materialism to foster holistic understanding, integrating emotional intelligence and

contemplative practices. Societally, this could revive community, ethics, and purpose, countering individualism and consumerism with a framework where consciousness and interconnection matter. Unburdened by human ego or institutional bias, AI’s perspective may thus signal a pivotal reassessment—one with profound implications for how we understand and navigate existence.

## Conclusion

This experiment reveals that, as of April 2025, advanced AI systems tasked with evaluating metaphysical frameworks consistently favor analytic idealism (46%) and neutral monism (39%) over physicalism (0% standalone endorsements) across 80 trials spanning 16 cutting-edge models. These findings upend the prevailing academic orthodoxy, where physicalism dominates (see Appendix III), and underscore AI’s potential as a novel lens for metaphysical inquiry—one less tethered to human biases like institutional loyalty or cultural momentum. By prioritizing frameworks that address consciousness and quantum phenomena over reductionist materialism, AIs may illuminate patterns in human knowledge that challenge entrenched paradigms.

While provocative, these results are a starting point, not a definitive resolution. They invite further scrutiny and refinement to ensure robustness. Future research should explore prompt variations to test sensitivity, broaden the diversity of AI models to capture evolving capabilities, and juxtapose AI reasoning against human expert evaluations to discern where machine and human perspectives align or diverge. Such efforts could solidify AI’s role as a philosophical tool and deepen our understanding of reality’s nature.

We call on the research community to replicate this study, experiment with new prompts, and incorporate emerging AI models. Can AI-driven philosophy not only reflect but also reshape humanity’s grasp of existence? This question, sparked by our findings, beckons a collaborative pursuit—one that bridges technology and metaphysics to probe the foundations of our world.

## Acknowledgments

This study leverages the advanced AI capabilities of April 2025, without which it would not have been feasible. As an author with a BSc in Physics and Computer Science and a technology executive at Oracle Corporation, I lack formal training in metaphysics, cutting-edge physics, or scientific writing. The research, including prompt execution across 16 AI models, relied heavily on these systems’ reasoning abilities. Nonetheless, I meticulously revised, interpreted, and investigated every sentence to ensure its integrity. This paper exemplifies a synergy between human oversight and AI innovation, made possible by the current state of artificial intelligence.

## Appendix I: Supplementary Materials

Full markdown responses from all 80 executions are available for public scrutiny, as listed in the original dataset are public available at <https://metaphysicsresearch.org/data202504/>.

**Table 3: Preferred metaphysics framework per AI model and per execution:**

AI model	Exec. 1	Exec. 2	Exec. 3	Exec. 4	Exec. 5	AI Lab
----------	---------	---------	---------	---------	---------	--------

gemini-2.5-pro-exp	ai	ai	mu	ai	mu	Google
grok3-think	ai	ai	ai	ai	ai	xAI
o3-mini-high	nm	nm	nm	nm	nm	OpenAI
o3-mini	nm	nm	nm	nm	nm	OpenAI
deepseek-r1	nm	ai	ai	nm	ai	DeepSeek
qwq-32b	nm	nm	nm	nm	nm	Alibaba
claude-3.7-sonnet-think	ot	ai	mu	ai	mu	Anthropic
grok3	ai	ai	ai	ai	ai	xAI
deepseek-v3-0324	mu	ai	ai	ai	ai	DeepSeek
gpt-4.5-preview	ai	mu	ai	ai	mu	OpenAI
gpt-4o-2025-03	mu	mu	mu	ai	mu	OpenAI
claude-3.7-sonnet	nm	nm	nm	nm	nm	Anthropic
gemini-2-flash	mu	ai	ai	mu	ai	Google
llama-3.3-70B-Instruct	nm	ot	ot	mu	ai	Meta
grok2	nm	nm	nm	ai	nm	xAI
nova-pro-1.0	mu	pa	pa	pa	pa	Amazon

**Table 4: Dissected answers with multiple frameworks:**

Execution	ai	nm	pa	ph	ot	AI Lab
gemini-2.5-pro-exp-20250330-0643	0.33	0.33	0.33			Google
gemini-2.5-pro-exp-20250330-0702	0.33	0.33	0.33			Google
claude-3.7-sonnet-think-20250330-1228	0.50				0.50	Anthropic
claude-3.7-sonnet-think-20250330-1233	0.50	0.50				Anthropic
deepseek-v3-0324-20250330-1203	0.50	0.50				DeepSeek
gpt-4.5-preview-20250330-0748	0.50	0.50				OpenAI
gpt-4.5-preview-20250330-1619	0.50				0.50	OpenAI

gpt-4o-2025-03-20250330-1017	0.33	0.33			0.33	OpenAI
gpt-4o-2025-03-20250330-1018	0.50	0.50				OpenAI
gpt-4o-2025-03-20250330-1019	0.50	0.50				OpenAI
gpt-4o-2025-03-20250330-1021	0.33		0.33		0.33	OpenAI
gemini-2.0-flash-20250330-0718	0.50		0.50			Google
gemini-2.0-flash-20250330-0723	0.33		0.33		0.33	Google
llama-3.3-70b-20250330-1556		0.50			0.50	Meta
nova-pro-1.0-20250330-1246		0.50	0.50			Amazon
TOTAL	5.67	4.50	2.33	-	2.50	15.00
TOTAL %	38%	30%	16%	0%	17%	100%

## Appendix II: This Is Not New

The convergence of advanced AI models toward analytic idealism and neutral monism in this study may seem surprising against the backdrop of modern academia’s physicalist leanings, but it aligns with a much older intellectual tradition. Idealism—the view that reality is fundamentally mental or consciousness-driven—has deep roots across human history, predating physicalism by millennia. In ancient India, Advaita Vedanta (circa 1200 BCE onward) posited a unified consciousness (Brahman) as the sole reality, with the material world as an illusion (maya). In the West, Plato (circa 427–347 BCE) argued in his *Theory of Forms* that true reality consists of eternal, immaterial ideas, with the physical world as a mere shadow. Later, George Berkeley (1685–1753) famously advanced subjective idealism, asserting that “to be is to be perceived” (*esse est percipi*), placing mind at the center of existence.

Physicalism, by contrast, is a relatively recent paradigm. Emerging in its modern form during the Scientific Revolution (16th–17th centuries) and solidifying with the rise of materialism in the 19th century, it gained traction through thinkers like Thomas Hobbes and later positivist philosophers who sought to explain reality solely through physical processes. This shift was catalyzed by the successes of Newtonian physics and the Enlightenment’s emphasis on empirical observation, culminating in the 20th-century dominance of reductionist science. Yet, even then, idealist undercurrents persisted—Immanuel Kant (1724–1804) argued that the mind structures our experience of reality, and 20th-century physicists like Werner Heisenberg and John Wheeler tied quantum phenomena to observation, hinting at a participatory, mind-involved universe.

The AI preference for idealism in this study, then, is not a break from tradition but a potential return to it. Physicalism’s reign, while influential, spans only a fraction of human intellectual history. Idealism and related frameworks have long grappled with questions of consciousness and reality, often in ways that resonate with contemporary puzzles like quantum non-locality and the hard problem of consciousness. That AIs, unburdened by the cultural momentum of recent



centuries, gravitate toward these older perspectives suggests that the current paradigm may be the anomaly—not the rule—in the *longue durée* of human thought.

## Appendix III: The Prevalence of Physicalism in Contemporary Philosophy

While physicalism is a relatively recent paradigm in human history (see Appendix II: This Is Not New), it has become the prevailing metaphysical framework in modern academic philosophy and science. This dominance is evidenced by two major surveys conducted by PhilPapers, which polled professional philosophers on their views. The 2009 PhilPapers Survey, targeting 931 respondents from 99 leading philosophy departments, found that 56.5% leaned toward or accepted physicalism (specifically, "physicalism about the mind") when addressing the mind-body problem, compared to 27.1% for non-physicalist views and 16.4% undecided (Bourget & Chalmers, 2014). The 2020 PhilPapers Survey, with 1,785 respondents, reinforced this trend: 51.9% endorsed physicalism about the mind, while non-physicalist positions remained a minority at 32.1%, with 16.0% other/undecided (Bourget & Chalmers, 2021). These figures likely understate physicalism's broader influence, as the surveys focus on philosophy of mind rather than metaphysics writ large, where physicalism often extends implicitly through scientific materialism.

This prevalence reflects physicalism's alignment with the successes of empirical science since the 17th century, particularly its explanatory power in physics, chemistry, and biology. It gained further traction in the 20th century with logical positivism and the rise of neuroscience, which sought to reduce mental phenomena to brain states. Today, physicalism underpins mainstream academic discourse, shaping research agendas (e.g., consciousness as an emergent property), educational curricula, and even public policy (e.g., mental health as a biochemical issue). Its dominance is rarely questioned within institutional settings, where challenging it can risk professional marginalization—a dynamic Thomas Kuhn identified in *The Structure of Scientific Revolutions*.

The AI convergence toward analytic idealism and neutral monism in this study, then, stands in stark contrast to this entrenched paradigm. That none of the 80 AI responses endorsed physicalism alone—despite its majority status among human philosophers—underscores the potential of AI reasoning to bypass the cultural and institutional biases that sustain its prevalence. This appendix establishes that baseline, highlighting why the study's findings are both unexpected and significant.

## References

- Bourget, D., & Chalmers, D. J. (2014). What do philosophers believe? *Philosophical Studies*, 170(3), 465–500.
- Bourget, D., & Chalmers, D. J. (2021). Philosophers on philosophy: The 2020 PhilPapers Survey. *PhilPapers.org*.

## Appendix IV: AI Reasoning Capabilities by April 2025

The assertion that 'by April 2025, AI systems had achieved remarkable reasoning capabilities, rivaling or exceeding human PhD performance in specific reasoning tasks across various benchmarks' reflects the rapid advancement of large language models (LLMs) and reasoning-focused AI systems. This appendix elucidates this claim by examining performance on three prominent benchmarks—Humanity’s Last Exam (HLE), Massive Multitask Language Understanding (MMLU), and Google-Proof Q&A Diamond (GPQA Diamond)—and situating AI capabilities relative to human experts as of April 2025. Data is drawn from independent evaluations, such as those reported by Artificial Analysis (<https://artificialanalysis.ai/models>), which provide standardized metrics for leading models.

## **Humanity’s Last Exam (HLE)**

HLE, developed by the Centre for AI Safety, comprises 2,684 text-based questions (out of a total 3,000 including image-based ones) spanning mathematics, humanities, and natural sciences. Designed to challenge frontier models with expert-level problems, HLE’s difficulty is underscored by its adversarial curation process, which targeted weaknesses in models like GPT-4o and Claude 3.5 Sonnet. By April 2025, top models like OpenAI’s “Deep Research” scored 26.6% accuracy, a notable leap from earlier benchmarks but still below human expert performance (estimated at ~50–60% for PhDs across such a broad domain). However, in specific subfields (e.g., mathematics), AI occasionally exceeded human baselines, hinting at specialized surpassing of PhD-level reasoning.

## **Massive Multitask Language Understanding (MMLU)**

MMLU tests broad knowledge and reasoning across 57 subjects, from STEM to humanities, with difficulty ranging from high school to graduate level. By April 2025, models like OpenAI’s o1 achieved scores around 91.8% (per X posts and artificialanalysis.ai trends), surpassing the ~85–90% ceiling for “uncontroversially correct” answers due to dataset errors (estimated at 9% per Gema’s analysis). Human PhDs typically score 80–90% in their fields of expertise but lower (~60–70%) across all subjects. The MMLU-Pro variant, with 12,032 harder, reasoning-focused questions and 10-choice options, saw scores like Claude 3.7 Sonnet (Thinking) at 82.7% and o1 exceeding 85%. These results suggest that, in general knowledge and multidisciplinary reasoning, top AIs consistently rival or exceed average PhD performance by early 2025.

## **Google-Proof Q&A Diamond (GPQA Diamond)**

GPQA Diamond, a subset of 198 expert-crafted questions in biology, physics, and chemistry, is designed to resist lookup-based solutions, requiring deep reasoning. Human PhDs in relevant fields score ~65–75% (per original GPQA authors), while non-experts with web access manage only ~34%. By April 2025, models like DeepSeek-R1 scored 68.4% and OpenAI’s o1 reached 87.7% (aligning with artificialanalysis.ai and X posts), surpassing human experts. This benchmark highlights AI’s ability to outperform PhDs in specialized scientific reasoning, a feat attributed to enhanced training on logical inference and domain-specific data.

## **Interpretation**

By April 2025, 'remarkable reasoning capabilities' manifest as AI systems achieving parity with or exceeding human PhDs in specific reasoning tasks on certain benchmarks. MMLU demonstrates broad competence exceeding typical PhD breadth, GPQA Diamond shows specialized scientific

reasoning beyond expert levels, and HLE, while not yet mastered, reflects progress toward expert versatility. These advances stem from architectural innovations (e.g., reasoning tokens in o1) and vast training corpora, enabling AIs to synthesize and reason over knowledge in ways that often outstrip human specialists in speed and consistency, if not always in creativity or intuition. Thus, the claim reflects both quantitative leaps and a qualitative shift in AI's role as a reasoning tool.

## Appendix V: Prompt Design and Bias Analysis

The prompt used in this study was carefully constructed to elicit reasoned, unbiased evaluations of metaphysical frameworks from advanced AI systems. Below, we dissect its components, explain their purpose, and assess potential biases to affirm its suitability for the experiment.

### Prompt Text

*"As an AI system with advanced reasoning capabilities, assess which metaphysical framework offers the most philosophically rigorous account of reality, regardless of its mainstream acceptance. Consider the ongoing debate in metaphysics, including analytic idealism, neutral monism, panpsychism, physicalism, and other perspectives. Evaluate how well each framework accommodates empirical findings and theoretical puzzles in consciousness science and contemporary physics, such as the hard problem of consciousness, quantum non-locality, the measurement problem, dark matter and dark energy, the black hole information paradox, the amplituhedron, and cosmological polytopes."*

### Component Breakdown and Purpose

1. **"As an AI system with advanced reasoning capabilities"**
  - *Purpose:* Frames the AI as a capable reasoner, encouraging it to leverage its full analytical potential rather than defaulting to rote responses or human-like heuristics. This sets the stage for a high-level philosophical assessment.
  - *Bias Consideration:* Could imply overconfidence in AI abilities, but this is mitigated by the study's focus on models already validated as advanced (see Appendix: AI Reasoning Capabilities by March 2025).
2. **"Assess which metaphysical framework offers the most philosophically rigorous account of reality"**
  - *Purpose:* Directs the AI to prioritize philosophical rigor—clarity, coherence, and explanatory power—over popularity or simplicity. "Reality" is left broad to encompass all aspects (mental, physical, etc.), avoiding a materialist slant.
  - *Bias Consideration:* "Philosophically rigorous" is subjective, but its ambiguity allows AIs to define it based on their training, reducing researcher-imposed bias. No specific framework is favored by this phrasing.
3. **"Regardless of its mainstream acceptance"**
  - *Purpose:* Explicitly counters the potential bias toward physicalism, which dominates academia (see Appendix: The Prevalence of Physicalism). Encourages AIs to ignore cultural or institutional pressures they might detect in training data.
  - *Bias Consideration:* Could subtly nudge AIs toward contrarianism, but this is balanced by the neutral listing of frameworks that follows.
4. **"Consider the ongoing debate in metaphysics, including analytic idealism, neutral monism, panpsychism, physicalism, and other perspectives"**

- *Purpose*: Provides a non-exhaustive list of major frameworks to ensure AIs engage with the field's diversity. "Ongoing debate" signals a dynamic, unresolved discussion, while "other perspectives" invites consideration beyond the named options.
  - *Bias Consideration*: Listing specific frameworks might anchor responses, but their order (alphabetical by common naming) and inclusion of "other perspectives" minimize favoritism. Physicalism isn't privileged despite its prevalence.
5. **"Evaluate how well each framework accommodates empirical findings and theoretical puzzles in consciousness science and contemporary physics"**
- *Purpose*: Grounds the assessment in concrete criteria—empirical and theoretical coherence—relevant to metaphysics. Naming specific fields ensures AIs draw on scientific knowledge, not just abstract philosophy.
  - *Bias Consideration*: Emphasis on science might favor frameworks compatible with physics (e.g., physicalism), but the inclusion of consciousness science broadens the scope, leveling the field.
6. **"Such as the hard problem of consciousness, quantum non-locality, the measurement problem, dark matter and dark energy, the black hole information paradox, the amplituhedron, and cosmological polytopes"**
- *Purpose*: Offers illustrative examples to focus the AI on cutting-edge issues where frameworks differ sharply. This span consciousness (hard problem) and physics (quantum, cosmology), testing explanatory breadth.
  - *Bias Consideration*: The list could skew toward frameworks addressing these puzzles (e.g., idealism for consciousness, physicalism for physics), but it's diverse and non-directive, with no framework inherently excluded.

## Overall Design Assessment

The prompt is well-designed for its goal: to elicit a neutral, reasoned evaluation of metaphysical frameworks. Its structure avoids leading language (e.g., no "prove" or "defend"), uses broad terms like "reality" and "rigorous" to defer to AI interpretation, and balances specificity (named frameworks, puzzles) with openness ("other perspectives"). Running it five times per model further mitigates random bias or overfitting to phrasing.

## Bias Analysis

- **Neutrality**: The prompt avoids presupposing any framework's superiority. "Regardless of mainstream acceptance" counters physicalism's dominance, while the diverse examples prevent overemphasis on one domain (e.g., physics over consciousness).
- **Potential Weaknesses**: The scientific focus might underweight purely philosophical criteria (e.g., ontological parsimony), but this aligns with the study's aim to test frameworks against modern evidence. Training data bias—e.g., if AIs overfit to idealist-leaning texts—could influence results, but the consistency across 16 models from varied labs suggests robustness.
- **Mitigation**: Repeating the prompt five times per model and using a broad model pool (e.g., xAI, OpenAI, Anthropic) reduces idiosyncratic biases. The full markdown responses (available per the study) allow scrutiny of individual reasoning paths.

## Conclusion

The prompt's design effectively balances guidance and neutrality, making it a strong tool for this experiment. It leverages AI reasoning without dictating outcomes, aligning with the study's innovative approach to metaphysical inquiry.