

A Reflection on Physical Sciences: Finding Meaning in the Unreachable

Honors Optional paper

Harry Luo, Dec 2024

I recall Issac Newton's stance on the Divine first cause as: "God gave the initial momentum, and the rest can be calculated". This statement has haunted my thoughts throughout this semester's study of natural science philosophy. As we explored various theories in class – from evolution to mass extinctions, from fossil recognition to geological transformations – a pattern emerged that I couldn't ignore: our scientific process seems to revolve around constantly adjusting theories to match the evidence we observe.

In our discussions of historical sciences, we often found ourselves examining how scientists modify their explanations as new evidence emerges. A newly discovered fossil prompts a revision of evolutionary pathways. An unexpected geological formation leads to updated theories about Earth's history. Each time, we revise and refine our understanding to better match what we observe in nature.

This observation led me to a troubling realization: what if physical science can never truly "explain" nature? What if we're only ever seeing projections of truth, like shadows on a wall, and our theories are merely sophisticated attempts to predict these shadows' behaviors? This thought initially filled me with a sense of futility about the entire scientific enterprise.

But then I encountered a Chinese poem that changed my perspective: "掬水月在手" – "I scoop up a handful of water, and I have the moon in my hands." What struck me about this image was its beautiful absurdity. Water is shapeless; we can never truly capture it. Yet in attempting to hold the moon's reflection, we create meaning through the very act of trying.

With this insight, I found a new lens through which to view the physical sciences, one I now call "optimistic pessimism." I accept that science may never provide a final, unassailable explanation of the universe's deepest nature. At the same time, I embrace the immense value of the process itself—of testing, refining, and inching ever closer to truths that remain out of reach. This outlook is not resigned cynicism. Rather, it is a hopeful realism that finds purpose in the striving, even while acknowledging that the end goal may be unattainable.

Like the ancient myths from both the West and the East, of Prometheus, Sisyphus, and Wu Gang (吴刚), we find ourselves engaged in an endless task. Sisyphus rolls his boulder up the hill knowing it will roll back down. Wu Gang eternally chops at the self-healing osmanthus tree on the moon. It was in this spirit of "optimistic pessimism" that I came to recall the philosophical reflections of Albert Camus and his interpretation of the myth of Sisyphus. Sisyphus, forever rolling a boulder uphill only to watch it tumble down again, stands as a symbol of the human condition: we are engaged in tasks that appear fundamentally futile. Camus dares us to imagine Sisyphus happy—his happiness derived not from the promise of completion, but from the conscious embrace of his struggle.

In science, each new theory we push up the slope of understanding may roll back under the weight of new evidence. Yet, like Sisyphus, we keep pushing. When we recognize this process as the heart of our endeavor, the endless striving becomes meaningful. We are no longer defeated by the unattainability of perfect truth; we are ennobled by our persistent, collective effort to understand more today than we did yesterday. The value lies in the doing, in the

thinking, in the searching. This is how scientific inquiry, though imperfect, becomes an art of living—infused with dignity, passion, and purpose.

The moon's reflection may ripple and distort in our handful of water, but the act of reaching for it transforms both the reacher and our understanding of what can be reached. Perhaps that's what physical science really offers us – not final answers, but an endless, meaningful journey toward better questions.