

# A Realm of Abdus Sattar Paradox

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**Abstract:** I am going to write my 10<sup>th</sup> research paper .So today's topic is special one . I want to dedicate my paper to my chemist Grandfather Abdus Sattar . Though he is not in the world Physically but his humanity ,his knowledge is everywhere . I met him the day before he gave up his last breath . Sorry but it was not a whole day but only 2-3 hours . And we don't even talk each other.Because he was ill . But he just touched my hand . After his death , My Aunt Give him his all books even his Ph.D ,M.Sc thesis in Electrochemistry . Though I see him just one time but I am very much grateful to him because he has awakened my latent talent for chemistry . I loved chemistry before also but after reading his thesis paper I dreamed to be a chemist also . In this paper , I am going to discussed some scientific Philosophical Questions that can never be understood by modern Science . It will be a merge of philosophy and science . I will prove here also that science invention will never end . So , the scientist will never be jobless !!! N.B: In this paper I have researched many websites and forwarded there writings and make a complete guidelines. All resources are been attached with the writings Why Scientist especially Physicist need Philosopher ????

This is one of the most famous question in causing collision between philosopher and scientist . I get the best answer from scientific American web: <https://blogs.scientificamerican.com/observations/physics-needs-philosophy-philosophy-needs-physics/#:~:text=Contrary%20to%20claims%20about%20the,on%20the%20fertility%20of%20science.> I am going to forward this writings .

There's a spat brewing between some theoretical physicists and philosophers of science recently, and NPR's Adam Frank [has all the details](#). It started when one philosopher of science, David Albert, questioned the notion that the universe came "from nothing," as the title of Laurence Krauss' [new book](#) claims. This quickly escalated into a debate over whether philosophy of science was even a worthwhile endeavor, or just a distraction from the hard, nuts-and-bolts work of figuring out the nature of the universe.

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### Physics Needs Philosophy / Philosophy Needs Physics

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Contrary to claims about the irrelevance of philosophy for science, philosophy has always had,

and still has, far more influence on physics than commonly assumed. A certain current anti-philosophical ideology has had damaging effects on the fertility of science. The recent momentous steps taken by experimental physics are all rebuttals of today's freely speculative attitude in theoretical physics. Empirical results such as the detection of the Higgs particle and gravitational waves, and the failure to detect super-symmetry where many expected it, question the validity of philosophical assumptions common among theoretical physicists, inviting us to engage in a clearer philosophical reflection on scientific method.

*Against Philosophy* is the title of a chapter of a book by one of the great physicists of the last generation: Steven Weinberg.<sup>1</sup> Weinberg argues eloquently that philosophy is more damaging than helpful for physics—it is often a straightjacket that physicists have to free themselves from. Stephen Hawking famously wrote that “philosophy is dead” because the big questions that used to be discussed by philosophers are now in the hands of physicists.<sup>2</sup> Neil de Grasse Tyson publicly stated: “...we learn about the expanding universe, ... we learn about quantum physics, each of which falls so far out of what you can deduce from your armchair that the whole community of philosophers ... was rendered essentially obsolete.”<sup>3</sup> I disagree. Philosophy has always played an essential role in the development of science, physics in particular, and is likely to continue to do so.

This is a long-standing debate. An early delightful chapter of the debate was played out in Athens during its classical period. At the time, the golden youth of the city were educated in famous schools. Two stood out: the school of Isocrates, and the Academy, founded by a certain Plato. The rivalry between the two was not just about quality: their approach to education was different. Isocrates offered a high-level *practical* education, teaching the youth of Athens the skills and



knowledge directly required to become politicians, lawyers, judges, architects and so on. The Academy focused on discussing *general questions* about foundations: What is justice? What would be the best laws? What is beauty? What is matter made of? And Plato had invented a good name for this way of posing problems: “philosophy.”

Isocrates' criticisms of Plato's approach to education and knowledge were direct and remarkably like the claim by those contemporary scientists who argue that philosophy has no role to play in science: “*Those who do philosophy, who determine the proofs and the arguments ... and are accustomed to enquiring, but take part in none of their practical functions, even if they happen to be capable of handling something, they automatically do it worse, whereas those who have no knowledge of the arguments [of philosophy], if they are trained [in concrete sciences] and have correct opinions, are altogether superior for all practical purposes. Hence for sciences, philosophy is entirely useless.*”<sup>4</sup>

As it happened, a brilliant young student in Plato's school wrote a short work in response to Isocrates' criticisms: the *Protrepticus*, a text that became famous in antiquity. The bright young fellow who authored the pamphlet later left Athens, but eventually returned to open his own school, and had quite a career. His name was Aristotle. Two millennia of development of the sciences and philosophy have vindicated and, if anything, strengthened Aristotle's defense of philosophy against Isocrates' accusations of futility. His arguments are still relevant and we can take inspiration from them to reply to the *current* claims that philosophy is useless to physics.

The first of Aristotle's arguments is the fact that *general theory supports and happens to be useful for the development of practice*. Today, after a couple of millennia during which both philosophy and science have developed considerably, historical evidence regarding the influence of philosophy on science is overwhelming.

Here are a few examples of this influence, from astronomy and physics. Ancient astronomy—that is, everything we know about the Earth being round, its size, the size of the moon and the sun, the distances to the moon and the sun, the motion of the planets in the sky and the basis from which modern astronomy and modern physics have emerged—is a direct descendent of philosophy. The questions that motivated these developments were posed in the Academy and the Lyceum, motivated by theoretical, rather than practical concerns. Centuries later, Galileo and Newton took great steps ahead but they relied heavily on what had come before.<sup>5</sup> They extended previous knowledge, reinterpreting, reframing, and

building upon it. Galileo's work would have been inconceivable without Aristotelian physics. Newton was explicit about his debt to ancient philosophy, Democritus in particular, for ideas that arose originally from philosophical motivations, such as the notions of empty space, atomism and natural rectilinear motion. His crucial discussion about the nature of space and time built upon his discussions with (and against) Descartes.

In the 20th century, both major advances in physics were strongly influenced by philosophy. Quantum mechanics springs from Heisenberg's intuition, grounded in the strongly positivist philosophical atmosphere in which he found himself: one gets knowledge by restricting oneself to what is observable. The abstract of Heisenberg's 1925 milestone paper on quantum theory is explicit about this: “*The aim of this work is to set the basis for a theory of quantum mechanics based exclusively on relations between quantities that are in principle observable.*”<sup>6</sup> The same distinctly philosophical attitude nourished Einstein's discovery of special relativity: by restricting to what is observable, we recognize that the notion of simultaneity is misleading. Einstein recognized very explicitly his debt to the philosophical writings of Mach and Poincaré. The philosophical influences on the conception of general relativity were even stronger. Once again, he was explicit in recognizing his debt to the philosophical arguments in Leibniz, Berkeley and Mach. Einstein claimed that even Schopenhauer had a pervasive influence on him. Schopenhauer's ideas on time and representation are perhaps not so hard to recognize in Einstein's ideas leading to general relativity.<sup>7</sup> Can it really be a coincidence that, in his younger days, the greatest physicist of the twentieth century should have had such a clear focus on philosophy,<sup>8</sup> reading Kant's three

### **Critics when he was 15?**

Why this influence? Because philosophy provides methods leading to novel perspectives and critical thinking. Philosophers have tools and skills that physics needs, but do not belong to the physicists training: conceptual analysis, attention to ambiguity, accuracy of expression, the ability to detect gaps in standard arguments, to devise radically new perspectives, to spot conceptual weak points, and to seek out alternative conceptual explanations. Nobody puts this better than Einstein himself: “*A knowledge of the historic and philosophical background gives that kind of independence from prejudices of his generation from which most scientists are suffering. This independence created by philosophical insight is—in my opinion—the mark of distinction between a mere artisan or specialist and a real seeker after truth.*”<sup>9</sup> It is sometimes said that scientists do not do anything

unless they first get permission from philosophy. If we read what the greatest scientists had to say about the usefulness of philosophy, physicists like Heisenberg, Schrödinger, Bohr and Einstein, we find opposite opinions to those of Hawking and Weinberg.

Here is a second argument due to Aristotle: Those who deny the utility of philosophy, are doing philosophy. The point is less trivial than it may sound at first. Weinberg and Hawking have obtained important scientific results. In doing this, they were doing science. In writing things like “philosophy is useless to physics,” or “philosophy is dead,” they were not doing physics. They were reflecting on the best way to develop science. The issue is the *methodology* of science: a central concern in the philosophy of science is to ask *how* science is done and how it *could* be done to be more effective. Good scientists reflect on their own methodology, and it is appropriate that Weinberg and Hawking have done so too. But how? They express a *certain* idea about the methodology of science. Is this the eternal truth about how science has always worked and should work? Is it the best understanding of science we have at present?

It is neither. In fact, it is not difficult to trace the origins of their ideas. They arise from the background of logical positivism, corrected by Popper and Kuhn. The current dominant methodological ideology in theoretical physics relies on their notions of *falsifiability* and *scientific revolution*, which are popular among theoretical physicists; they are often referred to, and are used to orient research and evaluate scientific work.

Hence, in declaring the uselessness of philosophy, Weinberg, Hawking and other “anti-philosophical” scientists are in fact paying homage to the *philosophers* of science they have read, or whose ideas they have absorbed from their environment. The imprint is unmistakable. When viewed as an ensemble of pseudo-statements, words that resemble statements but have no proper meaning, of the kind recurrent for instance in the way Neil de Grasse Tyson mocks philosophy, these criticisms are easily traced to the Vienna Circle’s anti-metaphysical stance.<sup>10</sup> Behind these anathemas against “philosophy,” one can almost hear the Vienna Circle’s slogan of “no metaphysics!”

Thus, when Weinberg and Hawking state that philosophy is useless, they are actually stating their adherence to a *particular* philosophy of science.

In principle, there’s nothing wrong with that; but the problem is that it is *not* a very good philosophy of science. On the one hand, Newton, Maxwell, Boltzmann, Darwin, Lavoisier and so many other

major scientists worked within a different methodological perspective, and did pretty good science as well. On the other hand, philosophy of science has advanced since Carnap, Popper and Kuhn, recognizing that the way science effectively works is richer and more subtle than the way it was portrayed in the analysis of these thinkers. Weinberg and Hawking’s error is to mistake a particular, historically circumscribed, limited understanding of science for the eternal logic of science itself.

The weakness of their position is the lack of awareness of its frail historical contingency. They present science as a discipline with an obvious and uncontroversial methodology, as if this had been the same from Bacon to the detection of gravitational waves, or as if it was completely obvious *what* we should be doing and *how* we should be doing it when we do science.

Reality is different. Science has repeatedly redefined its own understanding of itself, along with its goals, its methods, and its tools. This flexibility has played a major role in its success. Let us consider a few examples from physics and astronomy. In light of Hipparchus and Ptolemy’s extraordinarily successful predictive theories, the goal of astronomy was to find the right combination of circles to describe the *motion of the heavenly bodies around the Earth*. Contrary to expectations, it turned out that Earth was itself one of the heavenly bodies. After Copernicus, the goal appeared to be to find the right combination of *moving spheres* that would reproduce the motion of the planets around the Sun. Contrary to expectations, it turned out that abstract elliptical trajectories were better than spheres. After Newton, it seemed clear that the aim of physics was to find the *forces acting on bodies*. Contrary to this, it turned out that the world could be better described by dynamical fields rather than bodies. After Faraday and Maxwell, it was clear that physics had to find laws of *motion in space, as time passes*. Contrary to assumptions, it turned out that space and time are themselves dynamical. After Einstein, it became clear that physics must only search for the *deterministic laws of Nature*. But it turned out that we can at best give probabilistic laws. And so on. Here are some sliding definitions for what scientists have thought science to be: deduction of general laws from observed phenomena, finding out the ultimate constituents of Nature, accounting for regularities in empirical observations, finding provisional conceptual schemes for making sense of the world. (The last one is the one I like.) Science is not a project with a methodology written in stone, or a fixed conceptual structure. It is our ever-evolving endeavor to better understand the world. In the course of its development, it has repeatedly violated its own rules and its own stated methodological assumptions.

A currently common description of what scientists do is collecting data and making sense of them in the form of theories. As time goes by, new data are acquired and theories evolve. In this picture scientists are depicted as rational beings who play this game using their intelligence, a specific language, and a well-established cultural and conceptual structure. The problem with this picture is that conceptual structures evolve as well. Science is not simply an increasing body of empirical information and a sequence of changing theories. It is also the evolution of our own conceptual structure. It is the continuous search for the best conceptual structure for grasping the world, at a given level of knowledge. The modification of the conceptual structure needs to be achieved from within our own thinking, rather as a sailor must rebuild his own boat while sailing, to use the beautiful simile of Otto Neurath so often quoted by Quine.<sup>11</sup>

This intertwining of learning and conceptual change and this evolution of methodology and objectives have developed historically in a constant dialogue between practical science and philosophical reflection. The views of scientists, whether they like it or not, are impregnated by philosophy.

And here we come back to Aristotle: Philosophy provides guidance how research must be done. Not because philosophy can offer a final word about the right methodology of science (contrary to the *philosophical* stance of Weinberg and Hawking). But because the scientists who deny the role of philosophy in the advancement of science are those who think they have already found the final methodology, they have already exhausted and answered all methodological questions. They are consequently less open to the conceptual flexibility needed to go ahead. They are the ones trapped in the ideology of their time.

One reason for the relative sterility of theoretical physics over the last few decades may well be *precisely* that the wrong philosophy of science is held dear today by many physicists. Popper and Kuhn, popular among theoretical physicists, have shed light on important aspects of the way good science works, but their picture of science is incomplete and I suspect that, taken prescriptively and uncritically, their insights have ended up misleading research.

Kuhn's emphasis on discontinuity and incommensurability has misled many theoretical and experimental physicists into disvaluing the formidable *cumulative* aspects of scientific knowledge. Popper's emphasis on falsifiability, originally a demarcation criterion, has been flatly misinterpreted as an evaluation criterion. The combination of the two has

given rise to disastrous methodological confusion: the idea that past knowledge is irrelevant when searching for new theories, that all unproven ideas are equally interesting and all unmeasured effects are equally likely to occur, and that the work of a theoretician consists in pulling arbitrary possibilities out of the blue and developing them, since anything that has not yet been falsified might in fact be right.

This is the current "why not?" ideology: any new idea deserves to be studied, just because it has not yet been falsified; any idea is equally probable, because a step further ahead on the knowledge trail there may be a Kuhnian discontinuity that was not predictable on the basis of past knowledge; any experiment is equally interesting, provided it tests something as yet untested.

I think that this methodological philosophy has given rise to much useless theoretical work in physics and many useless experimental investments. Arbitrary jumps in the unbounded space of possibilities have *never* been an effective way to do science. The reason is twofold: first, there are too many possibilities, and the probability of stumbling on a good one by pure chance is negligible; more importantly, nature always surprises us and we, limited critters, are far less creative and imaginative than we may think. When we proudly consider ourselves to be "speculating widely," we are mostly playing out rearrangements of old tunes: true novelty that works is not something we can just find by guesswork.

The radical conceptual shifts and the most unconventional ideas that have actually worked have indeed been always historically motivated, almost forced, either by the overwhelming weight of new data, or by a well-informed analysis of the internal contradictions within existing, successful theories. Science works through continuity, not discontinuity.

Examples of the first case—novelty forced by data—are Kepler's ellipses and quantum theory. Kepler did not just "come out with the idea" of ellipses: nature had to splash ellipses on his face before he could see them. He was using ellipses as an approximation for the deferent-epicycle motion of Mars and was astonished to find that the approximation worked better than his model.<sup>12</sup> Similarly, atomic physicists of the early 20th century struggled long and hard against the idea of discontinuities in the basic laws, doing everything they could to avoid accepting the clear message from spectroscopy, that is, that there was actually discontinuity in the very heart of mechanics. In both instances, the important new idea was forced by data.

Examples of the second case—radical novelty from old theories—are the heliocentric system and general relativity. Neither Copernicus nor Einstein relied

significantly on new data. But neither did their ideas come out of the blue either. They both started from an insightful analysis of successful well-established theories: Ptolemaic astronomy, Newtonian gravity and special relativity. The contradictions and unexplained coincidences they found in these would open the way to a new conceptualization.

It is not fishing out un-falsified theories, and testing them, that brings results. Rather, it is a sophisticated use of induction, building upon a vast and ever growing *accumulation* of empirical and theoretical knowledge, that provides the hints we need to move ahead. It is by focusing on empirically successful insights that we move ahead. Einstein's "relativity" was not a "new idea": it was Einstein's realization of the extensive validity of Galilean relativity. There was no discontinuity: in fact it was continuity at its best. It was Einstein's insightful "conservatism" in the face of those who were too ready to discard the relativity of velocity, just because of Maxwell's equations.

I think this lesson is missed by much contemporary theoretical physics, where plenty of research directions are too quick to discard what we have already found out about Nature.

Three major empirical results have marked recent fundamental physics: gravitational waves, the Higgs, and the absence of super-symmetry at LHC. All three are confirmations of old physics and disconfirmations of widespread speculation. In all three cases, Nature is telling us: do not speculate so freely. So let's look more closely at these examples.

The detection of gravitational waves, rewarded by the last Nobel Prize in fundamental physics, has been a radical confirmation of century-old general relativity. The recent nearly simultaneous detection of gravitational and electromagnetic signals from the merging of two neutron stars (GW170817) has improved our knowledge of the ratio between the speeds of propagation of gravity and electromagnetism by something like 14 orders of magnitude in a single stroke.<sup>13</sup> One consequence of this momentous increase in our empirical knowledge has been to rule out a great many theories put forward as alternatives to general relativity, ideas that have been studied by a large community of theoreticians over the last decades, confirming instead the century-old general relativity as the best theory of gravity available at present.

The well-publicized detection of the Higgs particle at CERN has confirmed the Standard Model as the best current theory for high-energy physics, against scores of later alternatives that have long been receiving much attention.

But CERN's emphasis on the discovery of the Higgs when the Large Hadron Collider became operational has also served to hide the true surprise:

the *absence* of super-symmetric particles where a generation of theoretical physicists had been expecting to find them. Despite rivers of ink and flights of fancy, the minimal super-symmetric model suddenly finds itself in difficulty. So once again, Nature has seriously rebuffed the free speculations of a large community of theoretical physicists who ended up firmly believing them.

Nature's repeated snub of the current methodology in theoretical physics should encourage a certain humility, rather than arrogance, in our philosophical attitude.

Part of the problem is precisely that the dominant ideas of Popper and Kuhn (perhaps not even fully digested) have misled current theoretical investigations. Physicists have been too casual in dismissing the insights of successful *established* theories. Misled by Kuhn's insistence on incommensurability across scientific revolutions, they fail to build on what we already know, which is how science has always moved forward. A good example of this is the disregard for general relativity's background independence in many attempts to incorporate gravity into the rest of fundamental physics.

Similarly, the emphasis on falsifiability has made physicists blind to a fundamental aspect of scientific knowledge: the fact that credibility *has degrees* and that reliability can be extremely high, even when it is not absolute certainty. This has a doubly negative effect: considering the insights of successful theories as irrelevant for progress in science (because "they could be falsified tomorrow"), and failing to see that a given investigation may have little plausibility even if it has not yet been falsified. The scientific enterprise is founded on *degrees* of credibility, which are constantly updated on the basis of new data or new theoretical developments. Recent attention to Bayesian accounts of confirmation in science is common in the philosophy of science, but largely ignored in the theoretical physics community, with negative effects, in my opinion.<sup>14</sup>

What I intend here is not a criticism of Popper and Kuhn, whose writings are articulate and obviously insightful. What I am pointing out is that a simple-minded version of their outlooks has been taken casually by many physicists as the ultimate word on the methodology of science.

Far from being immune from philosophy, current physics is deeply affected by philosophy. But the lack

of philosophical awareness needed to recognize this influence, and the refusal to listen to philosophers who try to make amends for it, is a source of weakness for physics.

Here is one last argument from Aristotle: More in need of philosophy are the sciences where perplexities are greater.

Today fundamental physics *is* in a phase of deep conceptual change, because of the success of general relativity and quantum mechanics and the open “crisis” (in the sense of Kuhn, I would rather say “opportunity”) generated by the current lack of an accepted quantum theory of gravity. This is why some scientists, including myself, working as I do on quantum gravity, are more acutely aware of the importance of philosophy for physics. Here is a list of topics currently discussed in theoretical physics: *What is space? What is time? What is the “present”? Is the world deterministic? Do we need to take the observer into account to describe nature? Is physics better formulated in terms of a “reality” or in terms of “what we observe,” or is there a third option? What is the quantum wave function? What exactly does “emergence” mean? Does a theory of the totality of the universe make sense? Does it make sense to think that physical laws themselves might evolve?* It is clear to me that input from past and current philosophical thinking cannot be disregarded in addressing these topics.

In loop quantum gravity, my own technical area, Newtonian space and time are reinterpreted as a manifestation of something which is granular, probabilistic and fluctuating in a quantum sense. Space, time, particles and fields get fused into a single entity: a quantum field that does not live in space or time. The variables of this field acquire definiteness only in interactions between subsystems. The fundamental equations of the theory have no explicit space or time variables. Geometry appears only in approximations. Objects exist within approximations. Realism is tempered by a strong dose of relationalism. I think we physicists need to discuss with philosophers, because I think we need help in making sense of all this.

To be fair, some manifestations of anti-philosophical attitudes in scientific circles are also a reaction to anti-scientific attitudes in some areas of philosophy and other humanities. In the post-Heideggerian atmosphere that dominates some philosophy departments, ignorance of science is something to exhibit with pride. Just as the best science listens keenly to philosophy, so the best philosophy listens keenly to science. This has certainly been so in the past: from Aristotle and Plato to Descartes, Hume, Kant, Husserl and Lewis, the best philosophy has

always been closely tuned in to science. No great philosopher of the past would ever have thought for a moment of not taking seriously the knowledge of the world offered by the science of their times.

Science is an integral and essential part of our culture. It is far from being capable of answering all the questions we ask, but it is an extremely powerful tool. Our general knowledge is the result of the contributions from vastly different domains, from science to philosophy, all the way to literature and the arts, and our capacity to integrate them.

Those philosophers who discount science, and there are many of them, do a serious disservice to intelligence and civilization. When they claim that entire fields of knowledge are impermeable to science, and that they are the ones who know better, they remind me of two little old men on a park bench: “Aaaah,” says one, his voice shaking, “all these scientists who claim they can study consciousness, or the beginning of the universe.” “Ohh,” says the other, “how absurd! Of course they can’t understand these things. We do!”

If anyone interested in this question more they can here this youtube video:

<https://youtu.be/IJ0uPkG-pr4>

## 8 Great Philosophical Questions That We'll Never Solve

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Philosophy goes where hard science can't, or won't. Philosophers have a license to speculate about everything from metaphysics to morality, and this means they can shed light on some of the basic questions of existence. The bad news? These are questions that may always lay just beyond the limits of our comprehension.

Here are eight mysteries of philosophy that we'll probably never resolve.

### 1. Why is there something rather than nothing?

Our presence in the universe is something too bizarre for words. The mundaneness of our daily lives cause us take our existence for granted — but every once in a while we're cajoled out of that complacency and enter into a profound state of existential awareness, and we ask: Why is there all this *stuff* in the universe, and why is it governed by such exquisitely precise laws? *And why should anything exist at all?* We

inhabit a universe with such things as spiral galaxies, the aurora borealis, and SpongeBob Squarepants.

And as Sean Carroll notes, "Nothing about modern physics explains why we have these laws rather than some totally different laws, although physicists sometimes talk that way — a mistake they might be able to avoid if they took philosophers more seriously." And as for the philosophers, the best that they can come up with is the anthropic principle — the notion that our particular universe appears the way it does by virtue of our presence as observers within it — a suggestion that has an uncomfortably tautological ring to it.

## 2. Is our universe real?

This the classic Cartesian question. It essentially asks, how do we know that what we see around us is the real deal, and not some grand illusion perpetuated by an unseen force (who René Descartes referred to as the hypothesized 'evil demon')? More recently, the question has been reframed as the "brain in a vat" problem, or the Simulation Argument. And it could very well be that we're the products of an elaborate simulation. A deeper question to ask, therefore, is whether the civilization running the simulation is also in a simulation — a kind of supercomputer regression (or simulation-ception).

### *The Thirteenth Floor.*

What's more, we may not be who we think we are. Assuming that the people running the simulation are also taking part in it, our true identities may be temporarily suppressed, to heighten the realism of the experience. This philosophical conundrum also forces us to re-evaluate what we mean by "real." Modal realists argue that if the universe around us seems rational (as opposed to it being dreamy, incoherent, or lawless), then we have no choice but to declare it as being real and genuine. Or maybe, as Cipher said after eating a piece of "simulated" steak in *The Matrix*, "Ignorance is bliss."

## 3. Do we have free will?

Also called the dilemma of determinism, we do not know if our actions are controlled by a causal chain of preceding events (or by some other external influence), or if we're truly free agents making decisions of our own volition. Philosophers (and now some scientists) have been debating this for millennia, and with no apparent end in sight. If our decision making is influenced by an endless chain of causality, then determinism is true and we don't have free will. But if the opposite is true, what's called indeterminism, then our actions must be random — what some argue is still not free will.

Shutterstock/malinx.

Conversely, libertarians (no, not political libertarians, those are other people), make the case for

compatibilism — the idea that free will is logically compatible with deterministic views of the universe. Compounding the problem are advances in neuroscience showing that our brains make decisions before we're even conscious of them. But if we don't have free will, then why did we evolve consciousness instead of zombie-minds? Quantum mechanics makes this problem even more complicated by suggesting that we live in a universe of probability, and that determinism of any sort is impossible.

And as Linas Vepstas has said, "Consciousness seems to be intimately and inescapably tied to the perception of the passage of time, and indeed, the idea that the past is fixed and perfectly deterministic, and that the future is unknowable. This fits well, because if the future were predetermined, then there'd be no free will, and no point in the participation of the passage of time."

## 4. Does God exist?

Simply put, we cannot know if God exists or not. Both the atheists and believers are wrong in their proclamations, and the agnostics are right. True agnostics are simply being Cartesian about it, recognizing the epistemological issues involved and the limitations of human inquiry. We do not know enough about the inner workings of the universe to make any sort of grand claim about the nature of reality and whether or not a Prime Mover exists somewhere in the background. Many people defer to naturalism — the suggestion that the universe runs according to autonomous processes — but that doesn't preclude the existence of a grand designer who set the whole thing in motion (what's called deism).

And as mentioned earlier, we may live in a simulation where the hacker gods control all the variables. Or perhaps the gnostics are right and powerful beings exist in some deeper reality that we're unaware of. These aren't necessarily the omniscient, omnipotent gods of the Abrahamic traditions — but they're (hypothetically) powerful beings nonetheless. Again, these aren't scientific questions *per se* — they're more Platonic thought experiments that force us to confront the limits of human experience and inquiry.

## 5. Is there life after death?

Before everyone gets excited, this is not a suggestion that we'll all end up strumming harps on some fluffy white cloud, or find ourselves shoveling coal in the depths of Hell for eternity. Because we cannot ask the dead if there's anything on the other side, we're left guessing as to what happens next. Materialists assume that there's no life after death, but it's just that — an assumption that can't necessarily be proven. Looking

closer at the machinations of the universe (or multiverse), whether it be through a classical Newtonian/Einsteinian lens, or through the spooky filter of quantum mechanics, there's no reason to believe that we only have one shot at this thing called life.

It's a question of metaphysics and the possibility that the cosmos (what Carl Sagan described as "all that is or ever was or ever will be") cycles and percolates in such a way that lives are infinitely recycled. Hans Moravec put it best when, speaking in relation to the quantum Many Worlds Interpretation, said that non-observance of the universe is impossible; we must always find ourselves alive and observing the universe in some form or another. This is highly speculative stuff, but like the God problem, is one that science cannot yet tackle, leaving it to the philosophers.

### 6. Can you really experience anything objectively?

There's a difference between understanding the world objectively (or at least trying to, anyway) and experiencing it through an exclusively objective framework. This is essentially the problem of qualia — the notion that our

surroundings can only be observed through the filter of our senses and the cogitations of our minds. Everything you know, everything you've touched, seen, and smelled, has been filtered through any number of physiological and cognitive processes. Subsequently, your subjective experience of the world is unique. In the classic example, the subjective appreciation of the color red may vary from person to person.

Image: Brian Hillegas.

The only way you could possibly know is if you were to somehow observe the universe from the "conscious lens" of another person in a sort of *Being John Malkovich* kind of way — not anything we're likely going to be able to accomplish at any stage of our scientific or technological development. Another way of saying all this is that the universe can only be observed through a brain (or potentially a machine mind), and by virtue of that, can only be interpreted subjectively. But given that the universe appears to be coherent and (somewhat) knowable, should we continue to assume that its true objective quality can never be observed or known? It's worth noting that much of Buddhist philosophy is predicated on this fundamental limitation (what they call emptiness), and a complete antithesis to Plato's idealism.

### 7. What is the best moral system?

Essentially, we'll never truly be able to distinguish between "right" and "wrong" actions. At any given time in history, however, philosophers, theologians, and politicians will claim to have discovered the best

way to evaluate human actions and establish the most righteous code of conduct. But it's never that easy. Life is far too messy and complicated for there to be anything like a universal morality or an absolutist ethics.

The Golden Rule is great (the idea that you should treat others as you would like them to treat you), but it disregards moral autonomy and leaves no room for the imposition of justice (such as jailing criminals), and can even be used to justify oppression (Immanuel Kant was among its most staunchest critics). Moreover, it's a highly simplified rule of thumb that doesn't provision for more complex scenarios. For example, should the few be spared to save the many? Who has more moral worth: a human baby or a full-grown great ape? And as neuroscientists have shown, morality is not only a culturally-ingrained thing, it's also a part of our psychologies

(the Trolley Problem is the best demonstration of this). At best, we can only say that morality is normative, while acknowledging that our sense of right and wrong will change over time.

### 8. What are numbers?

We use numbers every day, but taking a step back, what *are* they, really — and why do they do such a damn good job of helping us explain the universe (such as Newtonian laws)? Mathematical structures can consist of numbers, sets, groups, and points — but are they real objects, or do they simply describe relationships that necessarily exist in all structures? Image: Shutterstock/Sashkin.

Plato argued that numbers were real (it doesn't matter that you can't "see" them), but formalists insisted that they were merely formal systems (well-defined constructions of abstract thought based on math). This is essentially an ontological problem, where we're left baffled about the true nature of the universe and which aspects of it are human constructs and which are truly tangible.

Tracing the Quote: Everything that can be Invented has been Invented  
Originally Written In Patentlyo By Dennis Crouch

WEBSEARCH:

<https://patentlyo.com/patent/2011/01/tracing-the-quote-everything-that-can-be-invented-has-been-invented.html>

Charles H. Duell was the Commissioner of US patent office in 1899. Mr. Deull's most famous attributed utterance is that "everything that can be invented has been invented." Most patent attorneys have also heard that the quote is apocryphal.



In his 1989 article, Samuel Sass traced the quote back to 1981 book titled "The Book of Facts and Fallacies" by Chris Morgan and David Langford. Sass did his work well before Gore created the Internet, so I decided to take a fresh look at the research using Google. The following chart was created based on



However, with a bit more searching, I came across an 1899 edition of Punch Magazine that had been donated to Harvard University by the Pulitzer family. In that edition, the comedy magazine offered a look at the "coming century." In colloquy, a genius asked "isn't there a clerk who can examine patents?" A boy replied "Quite unnecessary, Sir. Everything that can be invented has been invented."

I suspect that 1899 joke is the origin of the expression. Of course, there is still Ecclesiastes.

**THE COMING CENTURY.**  
 SCENE—Office of a Publisher. Enter a Genius.  
*Genius.* I want to see the manager of the book department.  
*Boy.* Oh, there isn't one, Sir.  
*Genius.* Well, who looks after the pictures?  
*Boy.* That's done by machinery, Sir.  
*Genius.* Isn't there a clerk who can examine patents.  
*Boy.* Quite unnecessary, Sir. Everything that can be invented has been invented.  
*Genius.* Well, I want to leave a novel, a picture, and an idea.  
*Boy.* You must be rather old-fashioned, Sir. All sorts of work is done, nowadays, by mental photography.

Google's electronic compilation of 12 million books. The chart shows the frequency that the phrase "everything that can be invented" shows up in the corpus, grouped by the year of publication of each book. The chart shows that Mr. Sass is largely correct in his assessment. Google has no reference to the quote prior to 1980 in its ngram database.



Charles H. Duell was the Commissioner of US patent office in 1899. Mr. Duell's most famous attributed utterance is that "everything that can be invented has been invented." Most patent attorneys have also heard that the quote is apocryphal.

**Conclusion:**

In this paper I have written many question basically forwarded many sites writing .It was just a case study to help people not to search google to find the answer . If you find an alternate answer then email me :rusho.ali17@gmail.com

**Reference:**

1. www.rusho.org
2. Life after life book
3. Phylosophical science book
4. www.soul.org