

## EPISODE 25

# SCIENTISM

Hi there. Welcome to the end of the world. My name is Michael Folz. And this is Episode number 25 of my podcast Dial It Back Or Die. Now last time I went over how what most historians agree was a continuing degeneration of France and its politics, morals, and social cohesion, how that was the background for the French philosophes and their version of the Enlightenment. And if it has occurred to you that the broad outlines of what was going on in France in the 18<sup>th</sup> Century sound suspiciously like what was going on here in the West in the latter half of the 20<sup>th</sup> Century, well, that's kind of my implied point. After all, recent writers such as Gore Vidal or Christopher Hitchens, who, behind the facade of intellectualism, snidely and sarcastically denigrated all tradition and belief, were very similar to Voltaire. And Rousseau certainly comes across as an 18<sup>th</sup> Century version of a thinking man's hippie. Further, the phenomenon of organic food and concern about climate change going hand in glove with an otherwise increasingly artificial and meaningless life certainly evokes the Age of Sensibility. So called sexual liberation, the loosening of social bonds and structures, an evaporation of organized religious beliefs, all of this is almost a note for note repeat of what happened in the 18<sup>th</sup> Century.

And if that thought hasn't already occurred to you, then I suggest that you keep it in mind. Because said analogue is going to continue.

But today we're going to discuss another subject which was central to 18<sup>th</sup> Century thought. And this is the worship of, and misuse of, both science and, more broadly, the scientific method.

Now it is no wonder that virtually every educated person in the 18<sup>th</sup> Century was fascinated by science. I have already gone over how men like Galileo and Newton had shown that the physical laws of motion, inertia, and gravity could be expressed as relatively simple and elegant mathematical equations. But by the mid 18<sup>th</sup> Century a lot more was also going on. For instance, discoveries made with the relatively newly invented microscopes and telescopes had shown our physical Universe to be

both much, much smaller and also much, much larger than anyone could have ever imagined. The first geologists were proving that the Earth was much, much older than anyone would have thought possible. The Swedish botanist Linnaeus was effectively cataloging every known plant and animal into believable families and orders. On top of all this the new, mysterious force of electricity seemed to have science actually touching the realm of the mystical.

Although it is important to note that back then there wasn't really anyone anywhere who was a full time scientist in the modern sense. In fact, the word 'scientist' itself wasn't even invented until 1834. Instead the entire subject was covered by the term 'natural philosophy'. And the investigation of natural laws was much closer to being an absorbing hobby that almost all intellectuals were engaged in at one level or another. For instance, the writer Voltaire spent ten years tinkering in his own private lab. The businessman and inventor Benjamin Franklin while in his forties happened to take up the subject of electricity and immediately hit upon some of the most important discoveries of the century.

Nor was the study of natural philosophy restricted to any particular political or philosophical mindset. Joseph Priestly is famous both as the inventor of soda water and as one of the first people to isolate oxygen out of the atmosphere. But he was also a Dissenting preacher and one of the founders of the Unitarian Church. The otherwise reactionary French queen Marie Antoinette was an enthusiastic backer of the first hot air balloon flights.

Taking all of this into account, it is easy to see—given the incredible advances that the physical sciences were making in explaining the world—why some people would come to think that soon science would also be able to explain all of human behavior. What's more, just as mathematical relationships were elegantly describing energies and physical forces, perhaps in the future *everything*, including abstract knowledge such as philosophy, could also be quantified.

Indeed, there was such a fascination with 'Science' that one might even call it a fetishization.

Which is why it might be useful to coin the term 'scientism' to describe the mental state which was actually going on back then. Because in reality people were slapping the word 'science' or its equivalent onto all kinds of half-baked ideas which had nothing to do with patient observation or experimentation or whatever.

Once again, though, it is critical to emphasize that fact that no one in the 18<sup>th</sup> Century was a full time scientist. And that therefore there was little general appreciation of what the scientific method actually entailed.

For example, in the first place there were all the boxes which the people back then couldn't

think outside of. From our vantage point it is easy for us to see them in their leggings and their wigs and their snuff boxes and their zillion cups of strong coffee a day and their politesse and their social climbing. And to then understand how truly constrained they were in their thinking.

After all, it was hard enough for them to come to grips with the new radical ideas about the physical world around them, such as the existence of electricity or of the age of the Earth. But human behavior? As was pointed out towards the beginning of all this, what with so many human traits so intertwined with so many other human traits, it is extremely difficult, if not impossible, even for present day social scientists to not be subconsciously confirming their preexisting ideological biases. You can imagine how difficult all of that was back then, when virtually no one was even dimly aware that such a problem could exist.

The much larger issue, though, has to do with exactly how that scientific method is supposed to play out. Because the way science works is this: It is definitely not sufficient that your hypothesis is plausible, interesting, or—and this is most important—that it confirms your preexisting belief system. You actually have to convincingly *prove* said hypothesis.

All of which might seem blindingly obvious.

But that is the whole point about scientism.

So let's refresh our memories and quickly go over some of the critical aspects pertaining to the scientific method.

For instance, back in Episode 3 I went over the two broad types of possible logic: Deductive and Inductive. You'll recall that deductive reasoning follows well established laws of logic. And that once a conclusion is reached then those laws of logic dictate that the same conclusion must always be reached. But deductive logic cannot happen unless and until some set of assumptions is assumed. And if these assumptions prove to have been incorrect, then all the deduction in the world is also going to be incorrect.

And it is true that at least some assumptions turn out to have been pulled out of thin air. But most assumptions are actually assumed through some level of inductive reasoning. Thus, for instance, since we have seen the sun rise every morning of our lives, we therefore induce (that is, assume) that it will also rise tomorrow.

And—as I pointed out back in the beginning—a great common sense term for inductive reasoning is... 'common sense'.

But by its very nature inductive reasoning has to be open to the possibility of it being wrong. For example, one can be surrounded by swans one's whole life and only see white ones. But extremely rarely a black swan does appear. And if and when that event occurs you would then have to change your knowledge that 'all swans are white' to 'virtually all swans are white'.

Then there is the situation where you yourself might take an active involvement in trying to figure out the truth that you are attempting to induce. Take the beginning of my example of a syllogism from back in Episode 3: All philosophers are men. Let's assume that the Greek who came up with it wasn't making a sexist or ideological statement. But rather he had counted up all the philosophers who had existed up to then and had found that they had all been male.

Now if you wanted to challenge such a statement it would not be sufficient for you to say, 'But intuitively it seems obvious to me that women could be philosophers too.' Nor would you necessarily have to be observational and to wait around for a female philosopher to appear on her own, like one of those black swans. No, you could also be experimental. You could find a female student and try to teach her philosophy. If she were then able to come up with original philosophical insights on her own you would then have proven your hypothesis.

Thus science encompasses both the observational and the experimental. In the present day Jane Goodall's observations of chimpanzee behavior in the wild have yielded valuable science. But so have experiments with captive chimps in the lab.

Although here we need to stop for a moment and point out an extremely important caution that you need to be aware of when we are looking into the history of science. And this is that what is obvious in retrospect usually was in no way even remotely obvious at the time. We may now think that it is obvious that a woman can be a philosopher. But back in ancient Greece, where indeed all philosophers were men, it was not so. And there could have been all sorts of plausible hypotheses for why this would be the case. For instance, perhaps women lacked the logical capacity. Or perhaps they had the capacity, but not the desire. Etc. Similarly, from our vantage point it is ridiculously obvious that the sun is the center of the solar system. But back at the time of Copernicus it was by no means clear.

So let's go back and look at that particular case once again as a prime example of how the scientific process actually works.

Now two thousand years ago the common sense, inductive conclusion that anyone would plausibly draw was that the Sun did indeed revolve around the Earth. After all, if nothing else, we

certainly don't feel any sense of movement ourselves.

On the other hand it also made a certain amount of intuitive sense that, given how the Earth received all of its heat from the Sun, that the Sun would be the center of the Universe. Indeed, many early religions saw the Sun as God Itself. And to early astronomers heliocentricity would also nicely geometrically explain why two of the planets, Mercury and Venus, seemed to operate completely differently from the rest of the solar system, both always remaining close to the Sun, and sometimes actually moving backwards across the sky.

But there were at least two huge stumbling blocks to this hypothesis. First, since it was known that the circumference of the Earth was approximately 24,000 miles, this would mean that the Earth was spinning around at 1,000 miles per hour. Given the speeds that the ancients were familiar with, not to mention that absolutely nothing was known about the laws of motion or gravity, how in the world could something spin that fast and not have everything fly off of it?

More importantly, when you took all the observed positions of the planets, and then tried to plot them in circles around the Sun, it just flat out didn't work. Which is why when the great ancient astronomer Ptolemy created circular orbits around the Earth, but then also threw in much smaller epicycles, in which planets temporarily went in backwards circles, his hypothesis fit in far better with all the observed data. (Of course, nowadays it seems absurd to think that planets could suddenly reverse their motion. But remember that, again, back then no one had the foggiest idea of how motion operated.)

And when Copernicus revived the heliocentric notion he added no new data or mathematics. Moreover, many of his conjectures were hopelessly off the mark. For instance, he hypothesized that, although the Earth revolved around the Sun, the Earth was still the only heavenly body which had any gravity. (So that, in a very real way, he was still actually saying that the Earth was the center of the Universe.) Nor was his particular heliocentric theory the only one out there. Later the Danish astronomer Tycho Brahe would formulate an entirely different one.

It turned out, however, that both of them were wrong. It wasn't until 1608, when Kepler hit upon the idea of ellipses, that everything fit so neatly into place. And, technically speaking, it wasn't until 1687, when Newton's 'Principia Mathematica' was published, and the laws of motion and gravity were finally expounded, that heliocentricity was actually proven. (And, again technically speaking, it turns out that two bodies always revolve around each other. Which explains why orbits are elliptical. And also why—technically speaking—in a sense the Sun actually does revolve around the Earth.)

And the stumbling block to accepting all of this? Once again, it had nothing to do with theology. Rather it had to do with scholars being unable to shake their ingrained belief, inherited from the Greeks, that the planetary orbits *had* to be circular.

It was another box that they couldn't think outside of.

There are so many lessons to be drawn both from this story and from the modern misrepresentation of it. But the one I want to impress upon you now is that it wasn't sufficient for Copernicus to present an interesting, even intuitively believable hypothesis. Rather it is that unless and until his heliocentric case could be *proven scientifically*, then the common sense, inductive default conclusion had to remain that the Sun moved around the Earth.

No matter how obvious it now seems in retrospect.

So now let's look at the 18<sup>th</sup> Century belief that all knowledge and human behavior could be discovered through science. As suggested before, to the amateur natural philosophers of the day this certainly *seemed* like a plausible hypothesis.

But it was equally plausible that this was not the case.

Moreover, it was also plausible that human behavior could be quantitatively approached, but that knowledge—What is wisdom? What is beauty?—could not. Or that some human behavior could be described, but other behavior not so much.

Finally, it was possible that human behavior had so many interconnected variables that, whereas in theory it was subject to scientific inquiry, in practice the interactions were so insanely complicated that a scientific approach would always come up short. As a present day example of this idea, weather scientists have had to humbly accept that, even with the most sophisticated supercomputers, there is such a fiendishly complicated interplay among atmospheric forces that there will always be severe limitations on our ability to predict the weather. The familiar way to illustrate this is to say that a butterfly flapping its wings in China could end up causing a thunderstorm in Brazil.

Or course, this last hypothesis about human behavior being impossible to quantify is no more proven than any of the others. But the essential point is this: Until one of these hypotheses is actually proved and/or one or more of them is disproved, then all of them are possible.

Anyway, back to the 18<sup>th</sup> Century again.

Because among certain of the Enlightenment thinkers this idea did take hold that all knowledge

and understanding could indeed be ultimately quantified. And that therefore fuzzy qualitative concepts such as 'wisdom' or 'beauty' by definition didn't exist.

This sort of scientism—making some claim and then thinking it true because one has loudly proclaimed oneself to be a devotee of 'science'—was bad enough. But there were also certain other fundamental beliefs, unsubstantiated by either observation or experimentation, which were established at that time that have passed down to the present era. So much so that, again, it is taken for granted that any 'modern' person somehow *knows* these beliefs to be scientific truths.

And now it is time for another one of those spoiler alerts. As in, here is an idea which has really spoiled everything that came after it.

Because foremost among these scientism beliefs, and perhaps the most pernicious, is the notion, which was first postulated by the pre-existentialist John Locke, of 'matter that thinks'.

You'll recall that when Descartes said, 'I think, therefore I am', what he was no doubt really trying to say was, 'I am conscious, therefore I am'. But back then, even though people in places like India could readily distinguish between Consciousness and Thought, people in the West really didn't or couldn't distinguish between thinking and being conscious. So that today it would be more accurate to say that the dilemma that Locke and then the 18<sup>th</sup> Century thinkers following him faced was in coming up with how to explain the phenomenon of 'matter that becomes conscious'.

Because it has always, in all civilizations, certainly *appeared* to be the case that the self-aware consciousness that we experience as humans was of a qualitatively different order of being than that of dead material. In fact, consciousness even appeared to be of a different order than that of other living animals. In other words, the common sense induction was that consciousness must be some vital essence which is disconnected from the material world.

But, starting with Thomas Hobbes in the 17<sup>th</sup> Century, certain atheistically inclined thinkers became more and more enamored with the hypothesis that the material world was all that there was. No souls. No loving or vengeful God. Etc. Which might well have saved them from the difficult thoughts that arise from a belief in souls and God. But it also immediately raised the question of just exactly how this dead material world could come up with something as profoundly different and unique as consciousness.

Certainly no one had ever observed such a process. Nor had anyone ever conducted any experiments that even suggested as to how such a process could occur. So that—and this is an

extremely important point—according to our understanding of the scientific method, *unless and until that happened* then 18<sup>th</sup> Century (and later) knowledge should have had to stick with the default, common sense understanding that consciousness and matter were indeed separate. And the notion of 'matter that becomes conscious' should have stayed as an interesting, but totally unproven, hypothesis.

Of course, that most definitely is not what happened. Instead the 'dead Universe' idea became the default position if you wanted to be a member of the scientific community. If you wanted to, as it were, join the Science Club. And the supposedly unbridgeable gap between Science and Religion was born. Even though up until the present day there has still been no one who has come up with any tenable, broadly accepted conception of just how it is that dead matter has become conscious.

In fact, (and as hard as it may be for the 'progressive' 'modern' mind to grasp), since the hypothesis still lacks any real scientific support, it is no doubt accurate to say that such a belief in conscious dead matter is just as magical as thinking that leprechauns exist.

And it is interesting to speculate the different directions that research might have gone into if such a fixation had not developed. For instance, virtually every culture has ghost stories. Virtually every culture has stories of seeming clairvoyance. And many of these are so believable and so improbable that if it weren't for our rock solid assumption that they *can't* be true, then we would probably have had to expand our conceptions of just how this Universe does operate.

Of course, as they say, a discussion of such topics is properly outside the scope of this series. Moreover, looking at the entire subject from an objective, scientific viewpoint, it is certainly possible that today or tomorrow someone actually will convincingly explain or demonstrate how material processes can produce consciousness.

But—(and not to be beating a dead metaphysical horse here)—but the way that the scientific process actually works is that, *unless and until that happens*, then the default position has to be the common sense one. Namely: If consciousness thoroughly appears to be and feels like it is qualitatively different from matter, then it actually is.

Or to put it another way: Without at least a testable hypothesis, the only honest scientific stance has to be, 'I have no idea what consciousness is or how it came about'.

And if this were the only was that 18<sup>th</sup> Century Scientism has affected our worldview it would be bad enough. Unfortunately, this combination of a false belief in the quantification of everything, ideological pre-conviction, and plain old self-serving justification set in stone a number of other

pseudo-scientific 'truths' that continue to cloud our thinking in the present day.

For instance, there is that understanding that the individual, like an atom, is the indivisible building block of society.

If this were indeed the case, then our whole modern emphasis on 'individual rights' would make perfect sense. After all, if back in the dim mists of time there actually had been some sort of social contract where those individuals had banded together for mutual protection and efficiency, then it would logically follow that as the world got safer and richer social bonds would no longer be necessary. Each individual would then be free to pursue whatever desires they felt like, irrespective of previous social norms and customs.

The problem with this idea, however, is that there was absolutely no evidence for it, either scientific or otherwise.

Because, as I've been repeatedly pointing out, every society up until then had always assumed and concluded that—even while thoroughly recognizing individuality and individual goals—man was essentially a social animal. And that in the end the needs of the group would always trump the needs of the individual. This is why, for instance, treason—which is a deliberate action to hurt one's tribe or country—was almost always treated as an automatically capital offense.

And in practical terms this understanding that the welfare of the greater society was far more important than that of any one individual was still paramount in most 18<sup>th</sup> Century minds. This is why the publication of 'Robinson Crusoe' in 1719 was such a sensation. Because it seemed almost inconceivable that any one individual could survive, let alone remain sane, outside the realm of the collective.

So that was one pseudo-scientific 'insight' that became dogma. Here's another, actually kind of a corollary to atomized individualism: Namely, that mankind's nature was primarily and exclusively selfish. That indeed the entire Universe manifested itself through selfishness. And this idea, too, is still with us in the modern and postmodern eras. For instance, selfishness is a bedrock assumption of both biology and evolution. In fact, people even write books with titles like 'The Selfish Gene'. And, like their 18<sup>th</sup> Century intellectual ancestors, present day biologists struggle to explain how seemingly altruistic behavior by humans and other higher mammals is, really, nothing other than a more sophisticated form of selfishness.

But, whether or not mankind is naturally selfish, no one, and I mean no one, throughout history

had ever had that observation about womankind.

Because no one in the history of the human race who had ever closely observed the female half of humanity, let alone who had lived with and amongst them, had even begun to suggest that they were anything but totally unselfish in their outlook. Certainly in regards to the welfare of their children. And almost always in regards to their husbands and larger families.

Of course, unless men became religious monks of some sort, up until that time virtually all men had been surrounded by wives, mothers, and daughters their entire lives. So that even if their particular culture deemed men's and women's roles to be highly independent of each other, the basic *unselfishness* of females had always been apparent.

But now we come back to that interesting observation that so many of the leading thinkers of the Enlightenment—Hobbes, Locke, Hume, Smith, Bentham—were not only lifelong bachelors, but in many instances they had had very little experience even with their own mothers, not to mention sisters or aunts or whatever. So that they literally didn't know what to make of the female half of humanity. And add to that the fact that others, such as Voltaire, only had relationships with the relatively dissolute 'independent' women of the rapidly devolving France.

So that it is easy to see how the emerging consensus of man's nature being both primarily individualistic and primarily selfish would conveniently ignore any consideration of what *woman's* nature might be. And—once again—this conclusion would occur entirely outside the bounds of any scientific observation or any scientific experimentation.

So, in conclusion to all this, here we have one of the central absurdities of the Age of Enlightenment. On the one hand the rigorous methods of 'science' were supposed to provide us with all of the answers to all of our questions. On the other hand, totally untested hypotheses—ones which actually flew in the face of common sense—were accepted as absolutely true.

But then it got even loonier. And for this we can thank David Hume.

Born in Edinburgh in 1711, Hume would be a principal actor in what is called the Scottish Enlightenment. Once again, there is no evidence that he had any intimate relationships with women or children or most other aspects of what most normal people would call the real world. And this may or may not strike you as relevant to the study of philosophy. But it might at least constitute a small part of the reason why Hume, in his philosophy, would run reason right off the tracks.

And, once again, I'm going to simplify everything. But here goes:

Because, like John Locke, Hume was an empiricist, a believer in the idea that in the end it was impossible to ever truly *know* anything. But he took this at least one very large step further. To him this meant that it was also impossible to ever truly *infer* anything. For instance, just because the sun has risen every day of your life does not mean that you can infer that it will rise tomorrow. And since deductive reasoning requires assumptions which have been inferred, this also meant that you couldn't ever truly conclude anything, either.

But he went even further than that. He also declared that the whole process of deductive reasoning made no sense, either. In fact, he concluded that reasoning, including reasoning which resulted in moral conclusions, was all a sham constructed by our minds in order to justify whatever feelings and emotions might happen to be going through us.

You'll recall that Descartes had started his philosophical journey by being skeptical of all previously received wisdom. But he had done this as a means to arriving at some final, so to speak, *true* truth. And you'll also recall that behind the scientific method was an assumption that an honestly skeptical approach would ultimately tease out the secrets of nature.

But now what Hume was saying was that an absolute skepticism—that there was no such thing as 'true' truth—was all that we ultimately could have when contemplating the Universe.

And remember the weirdness (at least to our modern minds) of Locke being essentially an existentialist, and yet still adamantly affirming the existence of God? Well, Hume also took his radical empiricism to its obvious radical conclusion. And thus he adamantly affirmed the non-existence of God.

Now this is not to say that David Hume was somehow being intentionally evil or that he was, like Voltaire, just trying to justify his own hedonistic lifestyle. He wasn't. These were his honest thoughts. In fact he led a quite sober existence. And he seems to have been a genuinely nice person. What's more, he was actually a really good historian, and a rather successful one.

But in the realm of philosophy most experts consider him, as with Locke, to be not all that deep or perceptive. Certainly not on the level of, say, Kant or Spinoza. So that, in the normal course of events, as a philosopher he would not have been thought of as important or influential.

As I keep pointing out, though, the mid 18<sup>th</sup> Century was not the normal course of events. What with the aftermath of the chaos unleashed by the Reformation, combined with the increased wealth due to new technologies, now everyone—from the new middle classes flocking to the consuming trivialities of places like Bath to the slave owning sugar plantation owners to the Satan worshipers such as the Earl

of Sandwich—now everyone was unconsciously searching for some new mental framework to free them from the intellectual, religious, and political strictures which had worked to keep everyone more or less on the straight and narrow for the preceding seven hundred years or so. And thus Hume's central idea that by definition there could be no such thing as absolute truth or absolute morals or, really, absolute anything would be highly appealing to this newly emerging 'modern' mindset.

And so the final irony of scientism, then, is that a philosophical framework of absolute skepticism would be adopted which directly contradicted the central theoretical concept—that the Truth was somehow out there—which underlay the entire scientific method.

Anyway, that's it for today. Next time we're going to get back to our friend Jeremy Bentham. And also to the invention of 'economic man'.

Until then, though, once again I'd like to thank you so much for so far having listened.