

EPISODE 33

FAKE SCIENCE

Hi there. Welcome to the end of the world. My name is Michael Folz. And this is Episode number 33 of my podcast Dial It Back Or Die. And, as I've been promising, we're finally done with history for a while. And if you're still with us, I presume that this is because you found the history sufficiently interesting.

But my motive in providing all of that went beyond just showing you my history geekiness. Rather my main mission—given all the fake and misleading history out there—was to get us all on the same page in order to prepare us for the real meat and potatoes of this podcast. Namely, that soon to begin Science section.

Howsoever... I'm not naive enough to think that, just because I've laboriously labored to correct some of the false narrative that our culture has marinated us in, that this means that now we are all indeed on the same page. After all, to a large extent our culture has spent our entire lifetimes drumming various ideas into our heads. And no matter how faithfully you may have followed my step by step presentation, still the way that we human beings are constructed means that our minds have an incredible inertia towards wanting to snap back to their original belief systems. I mean, remember Dmitry, that high IQ Russian immigrant who thought that he was rejecting every last bit of Marxism even as he was regurgitating basic Marxist doctrines. Or remember my point about how, if and when we do definitively reject our foundational assumptions, no matter how dumb they are, we ourselves are then left uncomfortably plummeting through the void.

Well, I've personally spent enough time staring into the void not to recommend this as a permanent state of affairs. All the same, though, as we go through the Science section I'm going to be presenting some ideas and conclusions which—even though they might be extremely basic science—are exactly the opposite of some of the things which the wider culture continually tells you are true.

But that's not supposed to happen, is it? After all, History may well be written by the victors. History, because at least part of it is always going to be subjective, might well be twisted by ideology

or whatever. But Science is supposed to be good and clear and objective and true. Science is supposed to be what saves us from superstition and illogic and ideological manipulation.

Well... Not so fast.

Because, first of all, Science itself may, at least theoretically, be objective. But scientists are also human beings. That is to say, they can be just as emotional, and/or in need of social acceptance, and/or stuck in *their* original belief systems, as the rest of us. In fact, since many of them have used up most of their mental resources just in order to get that PhD, and, further, since their continued membership in the Science Club is contingent on not rocking the science boat, they very well might be more resistant to change or new ideas than the rest of us are.

And let me illustrate this with a strange, although true, story.

Now Louis Frank was a fully tenured professor of physics and astronomy at the University of Iowa in the early 1980s. Having started out in atmospheric physics, and having worked under James Van Allen (from whom the Van Allen belt is named), Professor Frank was now in charge of a NASA satellite which was taking pictures of the upper atmosphere. However, a small annoying problem was that the pictures that were developing all had tiny little black dots in them.

Now Dr. Frank and his colleagues initially assumed that the dots resulted from either a faulty transmission of the pictures or perhaps a faulty printing of them. But a student's difficulty with trying to eliminate the dots on an unrelated project led the professor to realize that the black specks must have some other cause. And being a good scientist, it took a while for him to exclude the possibility of other possible contaminants. But then spectroscopic analysis made him realize that what he was really seeing must be individual blocks of ice about twenty feet in diameter which were entering the Earth's atmosphere every few seconds. In effect, this meant that the solar system was actually full of literally billions and billions of teeny tiny frozen water comets that had been forever bombarding the Earth for billions of years.

No one in astronomy had ever even guessed that such a state of affairs could exist. And it did have some fascinating implications. Perhaps this was where the water in our oceans came from. Perhaps this was also where the original organic molecules from which life arose came from. But although the finding was rather interesting, in the end it wasn't all that earth shaking. Nor did it call into question any major theory or understanding of the Universe. It certainly didn't have anything to do with anyone's preexisting ideological leanings. So, even though several of his fellow astronomers

warned him not to, Professor Frank—after confirming his discovery through numerous methods—went ahead and published a paper on the phenomenon in 1986.

He was totally unprepared for the reaction. Because, without ever actually responding to any of his data or to any of his results, virtually every astronomer in the world contemptuously dismissed his idea out of hand. Which would have been bad enough. But then they also started getting extremely personal in their attacks upon him. Even worse, when he refused to retract his paper they started to totally ostracize him. It got so bad that when he showed up at scientific conferences he literally had to sit at a table all by himself and eat his lunch all alone. Worst of all, all of the grant money (which every scientist depends upon for research) completely dried up.

He was left with only one project to work upon, something that he had been hired for before the publication of his paper on tiny comets. It was another NASA atmospheric studies satellite. And as its director he was able to place another, more sophisticated, camera on it. Thus he could devise an experiment that would answer any possible plausible objection to the previous one. Finally in 1999 the satellite went up into orbit.

The results were immediate. The blocks of ice were real. Dr. Frank was completely vindicated. CNN and other news sources did feature stories on the strange case of the shunned professor. And in the ensuing years most astronomers have grudgingly come to accept that his billions of ice balls do indeed exist. Not that anyone is patting him on the back or saying that they are sorry. And not that, at this point, he expected anyone to, either. Instead he consoled himself with a quotation from the famous physicist Max Planck. That scientists never change their mind. They just die.

So here's a case of someone who had played by the rules, who had gotten his ticket punched in the proper way. He had obtained his PhD, done years of research, had become a tenured professor, and was accepted by his colleagues. To a non-astronomer his theory would seem about as non-controversial as they come. Further, if anyone were to question it, you would think that their objections would be as to the evidence or of the methods used. You would certainly not expect the entire astronomical profession to act like a group of nasty thirteen year old girls excluding some poor misfit from their little clique.

But they did. And although such behavior might not surprise those familiar with the workings of academia, it would shock most of us to know that grown men and women, people who we assume have taken some sort of oath to Truth and the scientific method, could act like that.

We'd like to think that the cloistered halls of ivy contained people of scrupulous intellectual integrity. Wise ones who protect us from the vagaries of slipshod thinking and the dangers of cultural decay. And maybe that was once so.

But, if so, then times have definitely changed.

Okay, that's one problem with scientists. Here's another.

Because we'd like to think that someone with a PhD in one branch of science would be at least pretty familiar with all of the other various branches. Certainly more so than your average semi-well educated layman.

But the reality is that this simply is not the case. For instance, most biologists are not even familiar with rudimentary astronomy. And most astronomers don't have the first clue about how biology actually operates. Which means that, for instance, as we shall shortly see, when one gets around to trying to figure out the probability of life on other planets it can get pretty hopeless pretty quickly.

In fact, specialization in the sciences gets so intense so early in the game that, in a field such as astronomy, a planetary scientist really can't tell you all that much about, say, quasars. And in turn an astrophysicist can't tell you all that much about, say, Jupiter.

And that's just with the hard sciences, such as Chemistry and Physics, which at least have a strong quantitative and experimental basis. Within the social sciences, such as Sociology or Anthropology, the ignorance between two branches of the same discipline can be really profound. For instance, as we shall see, Behavioral Economics has shown that almost all of the assumptions of classical economics are actually wrong. But that doesn't stop most economists from blathering away about Adam Smith and Milton Friedman. In Psychology, actual brain scientists have long ago decisively shown there to be intrinsic sexual differences in how our brains function. And yet other traditional psychologists still argue that gender is some sort of social construct.

But now we're edging away from the generalized observation that scientists happen to have the same human foibles as the rest of us. And starting to enter into the realm of what is the biggest determinant behind what causes Fake Science. And this is—once again, you guessed it—Ideology.

So now let me tell you another completely true story.

Jean-Pierre Lamarck, who lived from 1744 to 1829, was one of the founders of modern biology. In fact, he was the person who actually coined the term 'biology'. A Frenchman, who lived through the craziness of the Revolution, while not being too affected by it, he is also generally credited with having created the first coherent theory of evolution.

He is mostly remembered today, however, for his idea that the way in which natural selection guided evolution was that the knowledge learned by organisms from having successfully dealt with their environment was somehow then passed on to their offspring.

This was not a revolutionary idea, especially in the context of the beginning of the 19th Century. After all, most scientific thinkers of the time believed that there was some as yet unformulated principle of nature which guided creatures towards ever greater complexity. Heritability of acquired characteristics seemed an obvious way for this to occur.

In the mid 19th Century, however, an obscure Austrian monk named Gregor Mendel conducted a number of experiments with peas which conclusively showed that genes from two parents actually passed on through to the next generation in a totally unchanged and unreconstructed form. And that it was the dominant or recessive nature of the genes which determined whether or not they were expressed. Which meant not only that it was therefore the sheer luck of the draw which gave a new organism its set of genes, but that it was also the sheer luck of the draw which determined whether said organism thrived or died in the grim world of everyday existence.

In other words—at least at the level of inheritance—there was no grand guiding principle of Nature towards complexity or progress.

Now being an obscure Austrian monk, Mendel's work was completely ignored during his lifetime. But then at the beginning of the 20th Century other scientists independently arrived at the same conclusion. And a little historical research then turned up those pea experiments from forty years earlier.

So that nowadays Mendel is recognized as the founder of genetics. And his basic insights as to how genetics work are even more basic to the study of biology than is the theory of evolution.

Whereas meanwhile...

Now hopefully you'll remember from way back in Episode 4 that if there was one thing that citizens of the Soviet Union were sure of, it was that theirs was the most enlightened, most rational, most *scientific* system ever devised by man. So that in the new world which they were creating there would no longer be a need for a consumer culture and/or for there to be manufactured desires created

by advertising agencies in the service of Capitalist owners. Keeping Up With The Joneses would no longer be the motivating force for why you showed up for work in the morning. Instead mathematical models derived from linear systems analysis would fairly and equitably, and scientifically, determine what was made and who got how much of it.

But Communism's understanding of 'science' dated from Marx's writings in the middle of the 19th Century. And, as I said, at that time virtually every scientist believed that Nature's (almost mystical) intrinsic organizing principle was for Life to become ever more intelligent and complex. And ever more Progressive. So to Marx Scientific Progress wasn't just optimistic pep talk. It was an actual Law of Nature, a foundational assumption which was totally baked into the system.

One can readily see how Lamarck's ideas of how organisms 'progressed' and then passed on their new learning to their progeny fit in perfectly with this model. And how the 20th Century's new understanding of the random manner through which genetics actually worked would appear to fundamentally contradict this belief. Not to mention that the modern world's *Zeitgeist* was quite quickly turning away from supposedly hazy ideas such as *ether* or *will power* or even *progress*.

The ideology of the Soviet Union then was in direct contradiction with these new findings and attitudes of science. And if my earlier observation that ideology always trumps common sense is true, and if we throw in my other observation that science is just a much more sophisticated version of the inductive reasoning which is behind common sense, then it follows that ideology can and will also trump science itself.

So... Enter Trofim Lysenko.

Now by 1928 Soviet agriculture was in a bad way. Mostly as a result of forced collectivization, food shortages, even famine, were widespread. And the authorities were desperate for ways to increase food production. At this time Lysenko, who was then a very minor official at an agricultural research station in Azerbaijan, claimed to have documented proof that he had drastically improved crop yields by subjecting seeds to cold and moisture. What's more, he claimed that he also had proof that these newly acquired traits were then passed on to the next generation.

This was just what a good Marxist wanted to hear: Lamarck had been correct after all! This confirmed all those suspicions that genetics had been a bourgeois pseudoscience all along! And to top it off, Lysenko himself had come from a poor peasant family, therefore justifying Marxist-Leninist faith in the wisdom and the superiority of the working classes.

Stalin himself became an enthusiastic supporter, and Lysenko soon rose to one of the top positions in Soviet agronomy and biology. And in turn many of the biologists who still dared to believe in Mendelian genetics were imprisoned. Some were even killed. The subject soon became strictly off limits for discussion, let alone research.

But by 1955, after Stalin's death, some Soviet scientists started questioning all of this. And by the mid Sixties Lysenkoism had been completely repudiated and Lysenko himself was sent off to a tiny research station to end his years in total humiliation. But the damage had been done. Although the Soviet Union ended up producing, even after all the destruction of World War II, and even with all of its other problems, many, many world class physicists, chemists, and mathematicians, in biology it was thoroughly Third World. And Russia today is still somewhat behind the curve in biological research.

(Oh, and by the way, an interesting twist to all this is that very recently the field of epigenetics has found that, although genes do indeed pass on unchanged from generation to generation, an organism's particularly varied *expression* of genes can indeed be inherited. So that, in this limited sense at least, Lamarck had been right all along. Although none of that changes the fact that Lysenko himself was still a total fraud.)

Okay, those were the crazy, ideologically obsessed Soviets, right? Nothing like that could happen here in the West, right? After all, here in the West we believe in, er, ahem, *Science*.

But a little reflection should dissuade you of this idea. For, given that the regime was officially and adamantly atheistic, in the Soviet Union a belief in the truth of Science was raised almost to the level of a religion. Scientists were some of the most respected members of society. And it is probable that the average Soviet citizen was more knowledgeable about science than is the average American of today.

Speaking of which, let's start off this section by being real and admitting that the average—and for that matter even the above average—American of today is pretty damn ignorant about science.

For instance, consider the example of our currently hyper-heating planet. Nowadays it is common for those on the political left to mock all those conservatives who deny that climate change is happening. It seems that it is more than obvious that to ignore the vast majority of climate scientists who say that the Earth is warming, perhaps catastrophically, is to display a willful ignorance of not just the data at hand but of the whole structure of science itself.

Well, if you happen to be such a person of the Left it may well surprise you to find out that recent research, by a liberal Yale professor no less, has shown that those who deny climate change have just as much of a background in science as those who accept it. Sometimes more. More importantly, it turns out that most people on both sides of the issue are pretty clueless about actual climate science. And that what's really going on is a function of psychology, not scientific knowledge. For the real problem here is that the whole topic has become a political football, with belief in a warming Earth being seen as a belief in the Left's entire grab bag of policy positions. So that the end result is that any self-respecting Conservative could never be seen to be agreeing with the idea. Because doing so would then make them appear to support gay marriage, gun control, unrestricted immigration, and the like.

And this same phenomenon occurs just as profoundly with the other side. Because it is also true that the vast majority of nuclear scientists say that modern designs of nuclear power plants are absolutely safe. And, moreover, that a wholesale adoption of nuclear energy would be about the best way to combat climate change. Further, the vast majority of geologists say that hydraulic fracking, properly regulated, is perfectly safe. And that fracked natural gas would be an excellent medium term solution both towards the elimination of coal and for moving vehicles around. Even further, the vast majority of botanists say that genetically modified foods are perfectly safe. And that such foods are one of the best hopes for feeding all the hungry poor people of the world. Finally, the vast majority of medical professionals say that childhood vaccinations are perfectly safe.

Yet, nonetheless, in the face of all this broadly agreed upon Science, significant portions of Progressives deny one or more of these scientific truths. And just like climate change deniers, they too have their little group of out-on-the-fringe, so-called 'experts' who they believe are courageously standing up to the machinations of an inherently compromised and dishonest scientific establishment.

In effect the sad truth is that just about no one in this culture really cares to understand or respect science. And just about everyone ignores what the relevant scientists themselves regard as established truth whenever it suits their political or psychological interest to do so.

And this is at the level of 'only' politics. And so, if we are so ready to trash science for our political beliefs, how ready do you think we are to acknowledge science when it contradicts our ideological ones? That is to say, those deep seated, almost impossible to even acknowledge, foundational assumptions which, as I keep saying, permeate our entire thinking apparatus.

But it gets worse. Because the examples I just gave—climate change, nuclear energy, fracking, etc.—are all from the hard sciences. However, as I believe I've mentioned before, with the social sciences, by the very nature of how extremely difficult it is to isolate single variables in complex human behaviors, it is also extremely difficult to separate the so-called 'normative' from the so-called 'descriptive'. That is to say, for example, that because of my ideological beliefs it may be 'obvious' that having more women in a profession is a good thing. But to a Marxist social scientist it would be obvious that having more members of the proletariat in a profession would be a good thing. And to a Nazi social scientist it would be obvious that getting all of the Jews out of a profession would be a good thing. And no matter how unpleasant it might make us feel to compare our ideological beliefs to those of a Nazi, in terms of pure objective science our belief in gender equality is just as normative as was their belief system.

... And then it goes downhill from there.

Because—and going back here all the way to Episode 1—but the unpleasant truth is that we are living in a time of extreme cultural retardation. So much so that even those cultural icons which we used to be able to rely on for unflinching objectivity have also joined the rush to the bottom.

For instance, consider once again the New York Times.

Because, as I record this, just a couple of weeks ago there was an Op-Ed in the New York Times concerning athletic officials ruling on a South African person with an extremely rare condition wherein said person was technically a woman, but 'she' looked exactly like a man and, more importantly, 'she' had the testosterone levels of a man. And these officials had ruled that from now on someone can only compete as a woman if their testosterone levels were below a certain amount. So the New York Times immediately ran this Op-Ed, and prominently displayed the names of the authors of the Op-Ed as two 'doctors', certainly implying that they were experts on the subject. And the gist of the article was that, first, it was a myth that testosterone was somehow associated with masculinity, and, second, that levels of testosterone had nothing to do with athletic performance.

Well, being a semi-well educated layman myself, my immediate reaction was, 'this is ridiculous'. But part of me also said, 'But the New York Times prominently said that they *are* doctors. And surely a scientist or an MD wouldn't risk their professional reputation without any evidence of all, now would they?'

Well, it turned out that one of the so-called ‘doctors’ had a PhD in Women’s Studies. And the other had a PhD in Cultural Anthropology. No training in medicine or biology or chemistry for either one of them. And it turned out that even the New York Times comments writers, who are generally as Politically Correct in their attitudes as you can get, weren’t having any of it.

Now what do you think the chances are of the Times publishing an Op-Ed that you or I submitted? But here, because of the postmodern fixation on gender equality, the formerly staid, careful, boring New York Times was not only willing, but actually eager, to throw all established science out the window in order to support the current ideological dogma. In comparison it makes the whole Soviet/Lysenko thing seem like serious scientific debate.

And then, on top of that, there is what might be called the arrogance of ignorance. For instance, most ‘hard’ scientists are pretty lousy at the humanities. So that, say, a biologist really has no understanding of the various sophisticated arguments which have been made over the years concerning the existence or non-existence of God. A brain scientist may have no real understanding of 18th Century intellectual history. Yet because of their exalted sense of themselves as scientists, they therefore are totally confident pontificating away on these subjects.

And in the social sciences it’s even trickier. For, as you may be aware, the political outlook of the vast majority of sociologists and the like is overwhelmingly left wing. Which is understandable in that the whole idea of social sciences came about as a result of that belief in Scientism in the Age of Enlightenment. But this means, as we shall see, that in the present day, when social sciences come up with findings which directly contradict the ideas of the Age of Enlightenment, the social scientists themselves end up contorting themselves all out of shape in order to somehow explain away the contradiction.

And, again, it’s important to remember that they’re not doing this with evil intent. Rather, like their Marxist colleagues before them, they literally cannot believe that their closely held ideological assumptions could possibly be wrong.

And then, on top of all that, there’s the problem with what might be termed ‘popular science’. Because here, beyond the ideological nonsense, there’s the urge to publish for the general public studies and findings which may well have a limited truth, but that also, not so incidentally, tell us what we’d

like to believe for other reasons. Such as the idea that drinking coffee, or drinking wine, or having a lot of sex, is good for you.

And finally, on top of everything, there's the plain fact that a lot of new science which we might read about, while both relevant and often fascinating, is not yet established science. And a lot of the new conclusions are kind of like the situation with Lamarckism. That is to say, they certainly seem plausible. But then we also have to always keep in mind that the ultimate truth in Science has a way of occasionally throwing us for a loop. As what happened at the turn of the 20th Century with Relativity. And then slightly later with Quantum Physics. So that, until something is completely nailed down, we always have to be cautious.

And then finally, finally, finally, there's just plain cowardice. Because, just as any smart biologist in Stalinist Russia quickly learned to shut up about the truths of genetics, so it seems to me that many of the scientists out there in the present day must be only too aware of some of the acute ideological nonsense which is going on. But they also know that what happened to Professor Frank because of his tiny comets will happen to them in spades if they ever dare to question one iota of the prevailing ideology.

That is, the prevailing ideology as of this moment...

Anyway, so where does all this leave us? With the conclusion that everything everywhere is fake? Well, kind of.

But remember what I've been saying from the beginning. That if we're both willing and able to look beyond ideology, the truth is that the established science out there has gotten pretty clear as to what intrinsic human behavior and what the intrinsic human condition are.

Because there's nothing stopping us from still adhering to the basic standards of the scientific method which those nice Franciscan monks kindly first outlined for us way back in the 13th Century.

And next episode we'll be discussing just what those parameters are. And just how we can therefore go about separating the real science from the fake science.

As always, however, that is for next time. And, as always, for this time, once again thank you so much for so far having listened.