Eppur si muove.

In 1633, the Holy Roman Inquisition sentenced Galileo Galilei<fn>The father of modern science, if my public school education is to be trusted.</fn> to a lifetime of house arrest for having the audacity to agree with Copernicus regarding the Earth's motion around the Sun. Despite the fact that heliocentrism is one of the greatest scientific discoveries in history, the Church declared Galileo to be "vehemently suspect of heresy" and ordered him to recant under pain of punishment and excommunication. The myth holds that Galileo refused, pointing to the celestial bodies and declaring "Eppur si muove", Italian for "and yet it still moves". This could be one of those momentous events that never happened but should have – varying accounts have Galileo saying this upon release, upon transfer to a more benign/malign jailer, stamping his foot as he said it, or maybe not saying it at all. Either way, the phrase has come to symbolize the refusal of science to knuckle under to theological pressures to privilege theology over scientific evidence and observation.

But let's be fair. Mother Church finally came around after nearly 400 years and admitted its error in treating Galileo as it did. No harm, no foul, right? Bygones.

In 1859 and 1871, Charles Darwin published *On the Origin of the Species* and *The Descent of Man*. Again, one of *the* great leaps forward in understanding our world, and like heliocentrism, Darwin's theory of evolution threatened religious belief, most critically the origin myths of Genesis. Defenders of God declared Darwin to be a heretic, a fomenter, a radical lunatic to be ignored or, if necessary, discredited. But science marches on, and anyone with a rudimentary science education understands that the Theory of Evolution is about as controversial (on a scientific level) as the Theory of Gravity or the Germ Theory of Disease.

In 1925, in *The State of Tennessee v. John Thomas Scopes*, a substitute high school teacher was prosecuted under Tennessee's *Butler Act* for teaching Darwin's Theory of Evolution in a public school. Most people know the story from watching Spencer Tracy and Frederic March duke it out as stand-ins for William Jennings Bryan and Clarence Darrow in the 1960 movie *Inherit the Wind*. Tracy famously made a fool of March's character, and the movie sent a clear message – evolution was science, creationism (though the term barely existed then) was knuckle-dragging nonsense, and liberal-minded men of reason (men, always men) would lead the way to a brighter society based on evidence and reason. Holdouts arguing in favor of creationism might as well argue that gravity is "just a theory". Eppur si muove.

We all remember how horrified we were when poor downtrodden Dick York (the first Darren of *Bewitched*) was found guilty by the gullible rubes of small-town Tennessee, but never mind, man, because things must have been set right pretty quick. Frederic March being led away in enfeebled disgrace was all the signal we needed to know that Reason had conquered superstition. Right? Not so fast, there. The Scopes decision was appealed all the way to the US Supreme Court, which overturned his conviction on a minor technicality while affirming the Constitutionality of the Butler Act. Butler remained the rule of law until 1967. <fn>I was in first grade in Tennessee when the first rumblings about repealing *Butler* started up, and while I didn't know what in fresh hell he was talking about, my Dad's boss went off on a tirade one night about "not descending from no gal-durned monkeys" and "next they'll be teaching Hin-doo nonsense about evolving from *hands…HANDS!…and am I supposed to deny my God and believe THAT?"*. I remember it well because he zeroed in on me, a tender first grader vulnerable to the deceits and manipulations of the "communist plotters" and their "liberal comrades". Again, I had no idea what he was on about, but his intensity was unmistakable. And unforgettable. His voice

quivered with anger and indignation, his eyes afire at the threat “evil-lution” posed to our Godly way of life. I learned much later that he was a lifelong Goldwaterite and Bircher enthusiast.</fn> But no matter which laws are on the books; evidence supporting the theory of evolution mounts at a steady pace. Eppur si muove.

Eighty years after Scopes, *Tammy Kitzmiller et al v. Dover Area School District* flipped the script. In this case, parents objecting to the presentation of intelligent design (ID) as a viable alternative to evolution took their school district to court. The judge in this 2005 case – an appointee of Bush the Lesser – gave the creationists a thorough thrashing, calling out their arguments as ludicrous and the testimony of their expert witnesses as borderline perjuries. The full opinion is long, but if you are geek like me, the complete opinion in Dover is an awesome read. Judge Jones basically hands them their asses in tiny pieces. In the end, the school district was ordered to pay over $1 million to the plaintiffs to cover legal fees. Pushing theology as science can be a very expensive mistake. At last! We can all agree that creationism, or ‘intelligent design’, is a barely disguised tidbit of Christianist hooey dressed up as science. Could any question be more completely settled?

And yet just last month, retired baseball pitcher and ESPN commentator<fn>A word I hate above any other, aside from ‘moist’.</fn> Curt Schilling spent about 12 hours on Twitter declaring evolution to be permanently and definitively debunked. An ESPN journalist, Keith Law, got into it with Schilling on Twitter, pointing out the basic errors in his word salad. Standing tall, ESPN took immediate steps to ease the embarrassment staining its good corporate name. One can’t have the Help bickering in public.

Alas, ESPN managed to step right on the corporate Johnson by suspending Keith Law and ordering him to stay off Twitter. To be fair, ESPN did not subject Law to a lifetime of house

arrest or have his collected writings suppressed, and they fairly quickly un-suspended Law. They announced that they could not say exactly why Law had been punished<fn>The old "respecting the privacy of the employee" dodge.</fn> and un-punished, but that none of it had anything to do with helping Curt Schilling "show his ass to the world",<fn>In the words of Deadspin's Kevin Draper. Bravo!</fn> no siree, it's all a big coinkydink. Whatevs. Let's just guess that somebody in the executive suite realized that assuming the role of the Holy Roman Court of Inquisition in 2015 might not be the slickest move in the book, image wise. And to their credit, ESPN took no action against Schilling. It's always good when a knuckle-dragger shows his ass. I'm more comfortable knowing exactly what I'm dealing with.

His penance paid and his purgatory lifted, Law returned to the Twitter machine with a three word message: Eppur si muove. I'm going to go ahead and declare the Best Tweet in the History of Ever competition to be over. I had not thought about these three little words in a while. I thank Law for his pith, and, oddly, Schilling and ESPN for putting him in mind of it.

Thirty years ago, people who held beliefs like Schilling's were largely too embarrassed to show their ass the way he did. They might have believed the same thing, but mostly they had enough sense to keep it covered. No more. For better or worse,<fn>Worse. Definitely worse.</fn> Ronald Reagan's ascent to the presidency was enabled by cleverly organizing and mobilizing conservative Christians. It was a largely cynical play, in that Reagan's gang did not really care much about the religionists' agenda. But all the same, the fringe elements of American religiosity were invited to take a place at center stage, and the rest of America was 'invited' to treat them and their fringy ideas with tolerant respect. I'd suggest that the world was a better place when the snake handlers, moral majoritarians, and sundry other bible-banging grifters were subjected to intolerant ridicule, but I guess that's just me.

In 2012, 46% of polled Americans declared their belief in intelligent design driven by divine intervention. This near-majority insanity is one rationale offered by the ID partisans to support their claims that there is a controversy about the science, and it is a direct result of giving religionist extremists a seat at the table in the first place. But one of the greatest characteristics of science is that it's not a popularity contest, and it doesn't matter what you believe. What matters is whether or not the explanation holds true under rigorous observation. If it still moves, it still moves. It doesn't matter which ancient desert scroll you base your belief on if it contradicts the science. Done. Or so you would hope.

In 2010, an opinion poll about climate change found 43% of Americans declaring that human activity was not the cause, with 20% declaring there was no proof of change at all. Two years later, those denialist numbers had dropped to 30 and 12 percent respectively. Many media outlets have dropped the pretense of allowing denialists to present their claims on par with established climate science. The science is utterly settled on this, but the game is far from over.

For a couple of years I worked for a software maker in the extreme-risk insurance sector. This is a very conservative crowd, and my attendance at conferences had a distinctly behind-enemy-lines feel to it.<fn>The comments about Obama and Prof. Senator Warren were especially deranged and fringy.</fn> We would sit in session after session where actuaries and risk analysts from the big insurers talked about their efforts to understand and prepare for severe weather events created by climate change. Pentagon analysts would lay out studies and plans that directly address the reality of anthropogenic climate changes and the potential impacts on human health, food and water supplies, population migrations, and international conflicts. And then we'd go to the bar where the gaggle would consider the threat to their bottom lines, and

outright denial began to fade. Sure, there were still a few who loudly harrumphed that it was all a scam to make the climatologists rich, and Al Gore is still fat, etc. But the threat to the bottom line got their attention.

We've reached a point where the business and military interests recognize the threat to profits and security posed by climate change. On the other side, acknowledging and addressing the realities of climate change would tap the bottom line of some very powerful people and institutions who profit greatly from the status quo. And as with evolution, there is a significant slice of the population that embraces opinions contrary to accepted science for no reason beyond tribal reflex: if *libbberrrullls* believe something, let me believe the opposite. The science is clear: we're destroying the ability of our planet to sustain human life. We will either address it or not. In the end, the inexorable march of nature will have its way, public opinion be damned.

Trends in public opinion on a variety of issues have moved in what we could roughly call the liberal direction in recent years. Approval of equal rights for gay and lesbian couples regarding marriage, adoption, and employment is overwhelming, albeit with a few well-entrenched institutions still manning the barricades. The once-universal condemnation of LGBT folk has all but disappeared. This game is won. But I've thought that before.

Public support for gun control regulations – especially background checks and waiting periods – is overwhelming, but again, well-financed institutions make it their business to block meaningful action that would threaten the bottom line.<fn>The NRA's claim that this is about the Bill of Rights is All. My. Balls.</fn> In 1967, noted pinko sympathizer Ronald Reagan signed into law the Mulford Act, which prohibited the public<fn>Meaning on your person, in your vehicle, and on the street or in any other public place.</fn> carrying of loaded firearms. The law's author was himself a

Republican.

On March 28, 1981, an assassination attempt on then President Reagan shocked the nation<fn>It was one of those “Teachable Moments” you hear so much about.</fn> and gave birth to calls for even stricter restrictions. Reagan gave full support to the Brady Bill, the last comprehensive piece of gun control legislation passed in this country. On March 28, 1991, 10 years after his shooting, Reagan said:

> *“I’m a member of the NRA. And my position on the right to bear arms is well known. But I support the Brady bill and I urge the Congress to enact it without delay. It’s just plain common sense that there be a waiting period to allow local law enforcement officials to conduct background checks on those who wish to buy a handgun.”*

The most conservative President this nation had seen in over 50 years believed – as does the majority of America today – that restricting easy access to firearms was solid public policy. Even the NRA agreed. Arguments against sensible regulation were relegated to Archie Bunker bigots, the brunt of jokes, the old school that was being swept away. Why are we debating this again? It was settled, right?

When I look at the backwards movement on other issues – evolution is one, along with reproductive rights; the importance of affordable, universal education; the value of the arts in education and quality of life, among many – and I wonder why we are even having a conversation about these things, much less having to fight against losing hard won advances. And it makes me wonder if twenty years out we won’t be back re-arguing climate change or gay marriage. I mean really. Birth control? Evolution? It was settled, right?

No worries, though. It only took Mother Church about 400 years to come clean on Galileo. Maybe by 2250, the inheritors of creationist superstitions may admit their errors about Darwin.

That is, unless the climate denialists have their way, because then it won’t make any difference.