

Cargo Cult Science May Be Causing You To Lose Out On The Truth

“The real purpose of the scientific method is to make sure nature has misled you into thinking you know something you don’t know.” – Robert Pirsig

“The more I learn, the more I realize how much I don’t know.” - Albert Einstein

What we’re covering:

- How important maintaining an objective process & avoiding the destruction cargo cult sciences cause...
- What is the scientific method
- Evolution of my swing experiments (did you visit my <http://gohpl.com/swingexperiment> link?)
- How far I’ve come since 11yo swing experiment...

A couple recurring casts of characters:

- Dr. Ben Goldacre: Ben is a best-selling **author, broadcaster, campaigner, medical doctor and academic** who specializes in unpicking the misuse of science and statistics by journalists, politicians, quacks, drug companies, and more.
- Dr. Richard Feynman: American theoretical physicist, worked on Manhattan Project, received the Nobel Prize in Physics in 1965, British journal Physics World said he was ranked as one of the ten greatest physicists of all time, NY Times bestselling book.

Ben Goldacre says in his book, *Bad Science: Quacks, Hacks, & Big Pharma Flacks...*

“I spend a lot of time talking to people who disagree with me – I would go so far as to say that it’s my favorite leisure activity – and repeatedly I meet individuals who are eager to share their views on science despite the fact that they *have never done an experiment*. They have never tested an idea for themselves, using their own hands, or seen the results of that test, using their own eyes, and they have never thought carefully about what those results mean for the idea they are testing, using their own brain. To these people “science” is a monolith, a mystery, and an authority, rather than a method.”

Dr. Richard Feynman, in this book Surely You're Joking, Mr. Feynman! defines Cargo Cult Science:

“In the South Seas there is a cargo cult of people. During the war they saw airplanes land with lots of good materials, and they want the same thing to happen now. So they've arranged to imitate things like runways, to put fires along the sides of the runways, to make a wooden hut for a man to sit in, with two wooden pieces on his head like headphones and bars of bamboo sticking out like antennas—he's the controller—and they wait for the airplanes to land. They're doing everything right. The form is perfect. It looks exactly the way it looked before. But it doesn't work. No airplanes land. So I call these things cargo cult science, because they follow all the apparent precepts and forms of scientific investigation, but they're missing something essential, because the planes don't land.”

On the Scientific Method and maintaining an objective nature:

Paraphrasing: “Give people all the facts they need to judge the value of your contribution, not just info that leads to judgment into one outcome or another. Be careful of biases.”

What is the Scientific Method?

1. Question
2. Background Research
3. Hypothesis
4. Data Collected
5. Data Analysis & Conclusion

Evolution of Swing Experiments – What I learned along the way...

1. Mike & Joey Batted Balls w/ Wood v. Metal Bats
2. Show numbers v. Not Showing Numbers
3. Don't Buy Expensive Bats Before Testing First

Things I've learned:

- How to isolate a variable,
- Looking at taking bigger sample sizes,
- Building an apples to apples comparison with data collection,
- Breaking swing into two parts,
- Removing “warming up” biases, and
- Removing “getting tired” biases.

What we went over:

- How important maintaining an objective process & avoiding the destruction cargo cult sciences cause...
- What is the scientific method
- Evolution of my swing experiments (did you visit my website link?)
- How far I've come since 11yo swing experiment...