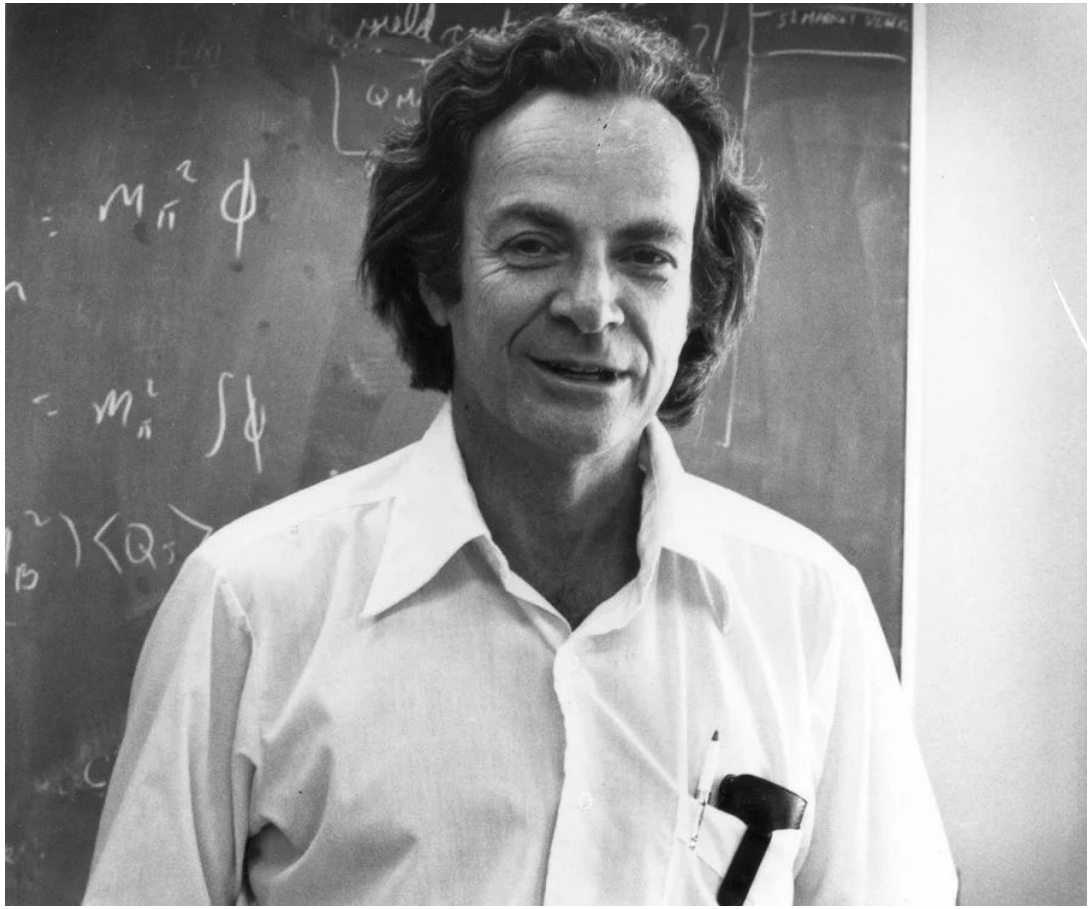
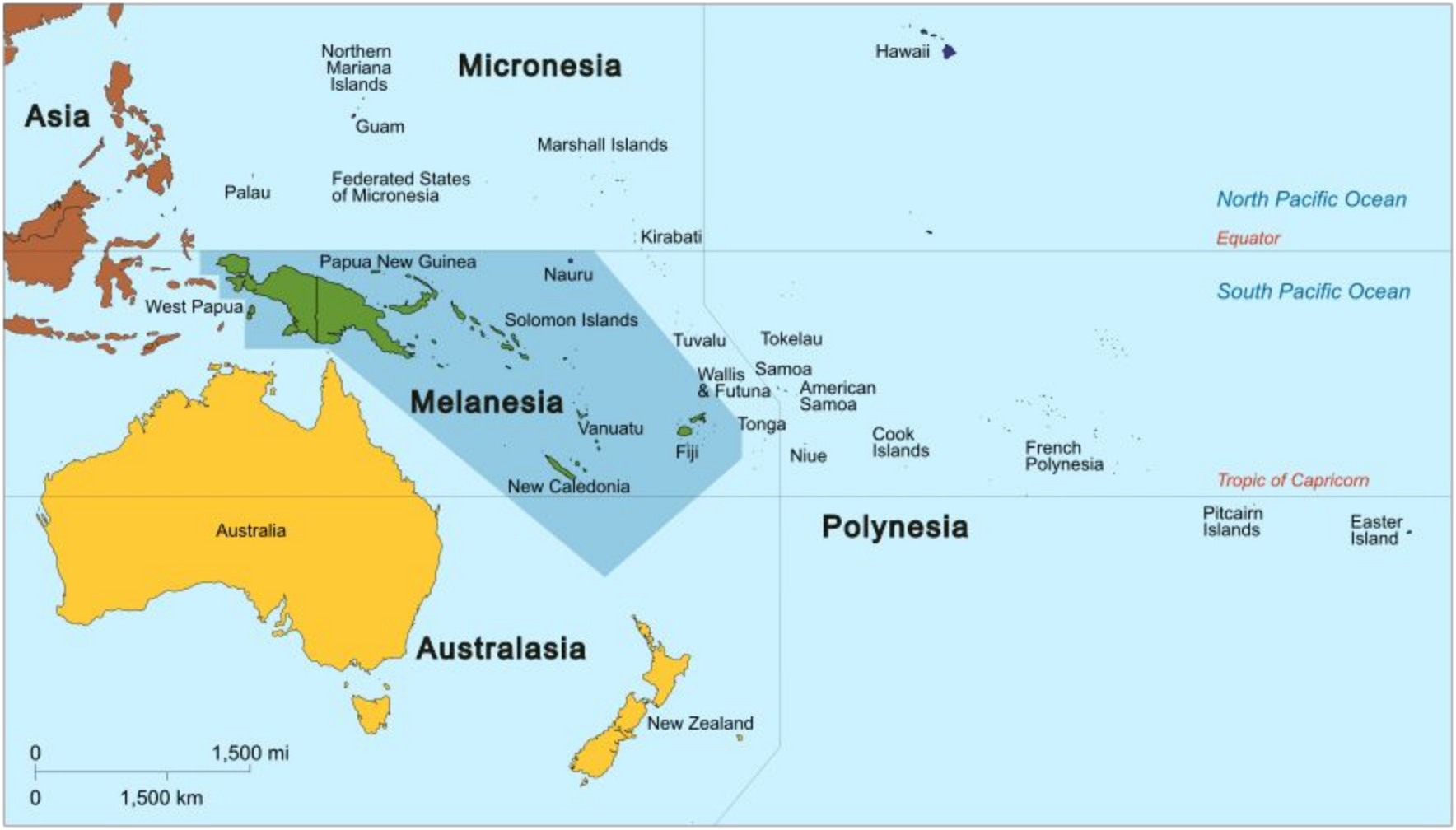
The Cargo Cult of The South Seas

Dave Evans

edinbR - 2018/04/18



Some remarks on science, pseudoscience, and learning how to not fool yourself.



https://en.wikipedia.org/wiki/Melanesia#/media/File:Oceania_UN_Geoscheme_-_Map_of_Melanesia.svg

WAR!

https://en.wikipedia.org/wiki/History_of_Oceania#/media/File:NZ_3rd_Division_(USMC_photo).jpg

What’s Going On?

Romantic Understanding	*Classical Understanding*
A romantic understanding sees it primarily in term of immediate appearance.	*A classical understanding sees the world primarily as underlying form itself.*

Robert M. Pirsig

Examples

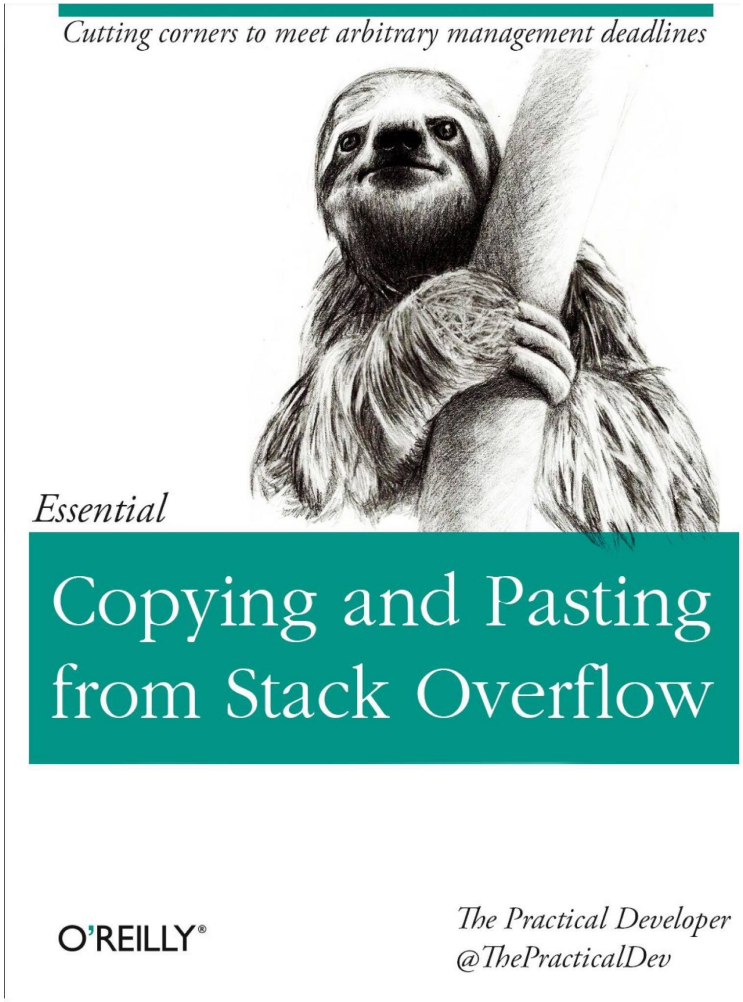
Cargo Cult Programming

https://xkcd.com/1597/

Cargo Cult Project Management

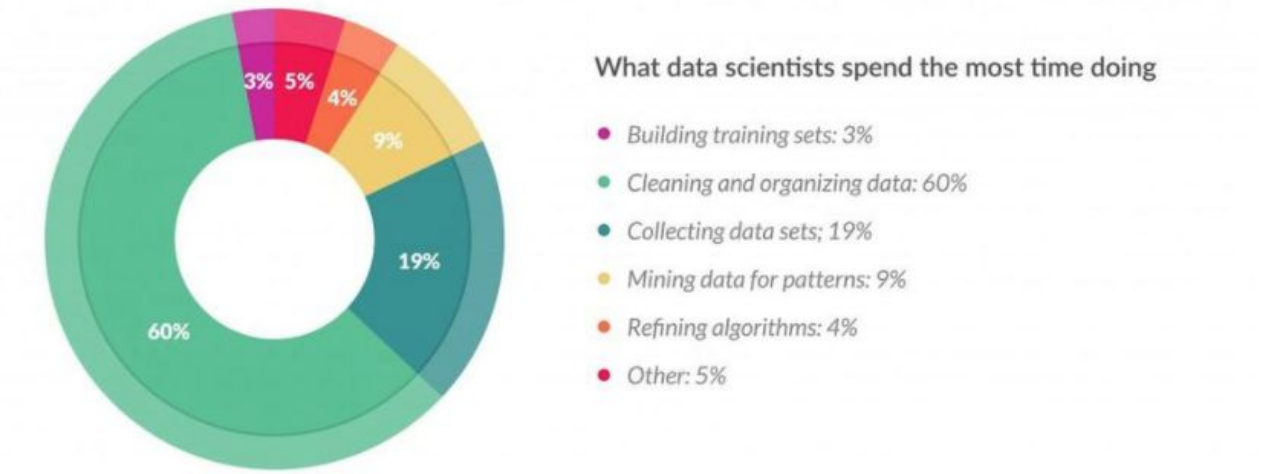
http://dilbert.com/strip/2011-03-11

Cargo Cult R
(for discussion in the pub?)



Cargo Cult Science

***Data preparation** accounts for about 80% of the work of data scientists*



https://www.forbes.com/sites/gilpress/2016/03/23/data-preparation-most-time-consuming-least-enjoyable-data-science-task-survey-says/#39ad7c8b6f63

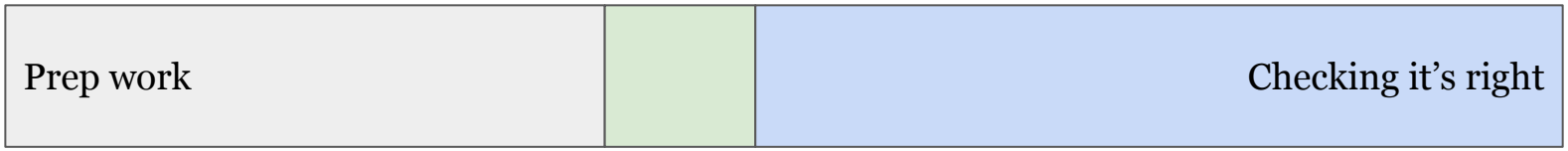
Cargo Cult Science

The Apparent

Getting the answer

Science

The Apparent



Getting an answer

Science

What Can We Do

The first principle is that you must not fool yourself—and you are the easiest person to fool.

So you have to be very careful about that.

After you've not fooled yourself, it's easy not to fool other scientists. You just have to be honest in a conventional way after that.

Richard P. Feynman (1974)

The Scientific Method

1. Statement of the problem
2. Hypothesis as to the cause of the problem
3. Experiments designed to test each hypothesis
4. Predicted results of the experiments
5. Observed results of the experiments
6. Conclusions from the results of the experiments

Robert M. Pirsig

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Logistics

Science is about comparing the expected consequences of our model of reality with what we observe

Cargo

Summary

1. Science is a systematic method to avoid fooling ourselves that has been developed over thousands of years. To benefit from the method you must understand how it works, beyond specific tools used by scientists.
2. Good science tests models of reality. Make sure you know what your model is, and what you expect to happen if it's true or not.

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