

How to do (Open*) Science

*what we call it NOW...



by Bruno Vieira (@bmpvieira)

What is Science?

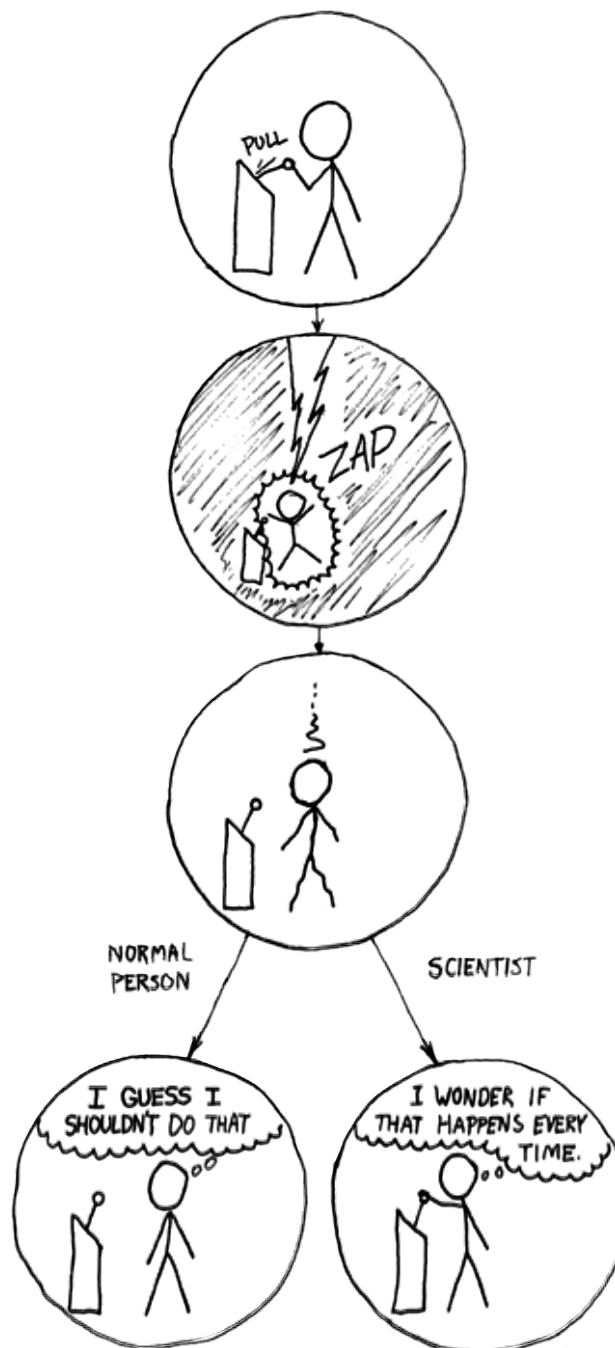
SYSTEMATIC ENTERPRISE
THAT **BUILDS** AND **ORGANIZES**
KNOWLEDGE
IN THE FORM OF **TESTABLE**
EXPLANATIONS
AND **PREDICTIONS** ABOUT THE
UNIVERSE.



Testable is key!

THIS MEANS THAT WE CAN

REPEAT AN EXPERIMENT AND
EXPECT THE **SAME RESULT**.



GIVEN THE SAME CONDITIONS...

**HAVING ACCESS TO ALL THE
INFORMATION**

TO REPLICATE AN EXPERIMENT IS HARD.



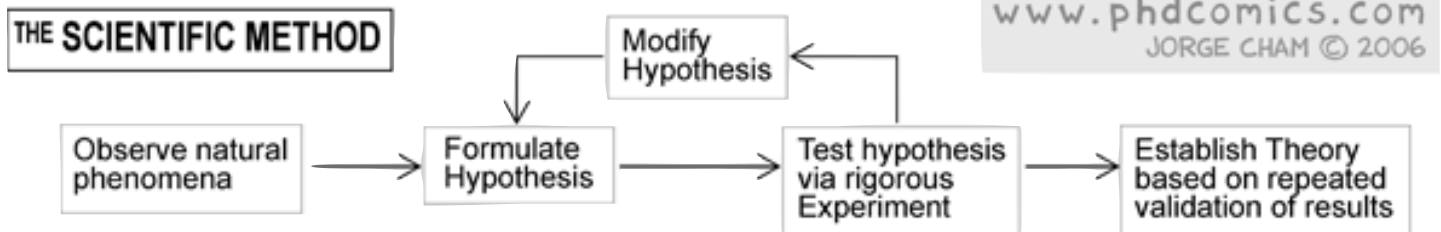
**A LOT OF RESEARCH IS PUBLISHED IN
CLOSED ACCESS JOURNALS**

Closed Science

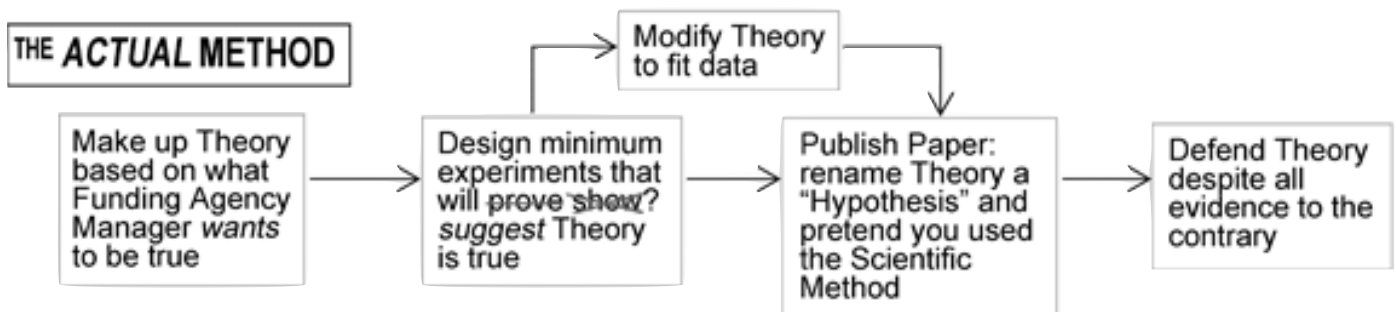
THERE IS LITTLE MOTIVATION TO RELEASE ALL
THE DATA, CODE, DOCUMENTATION

INCENTIVES ARE TO PUBLISH NEW AND
HYPED RESULTS IN GLAMOUR JOURNALS

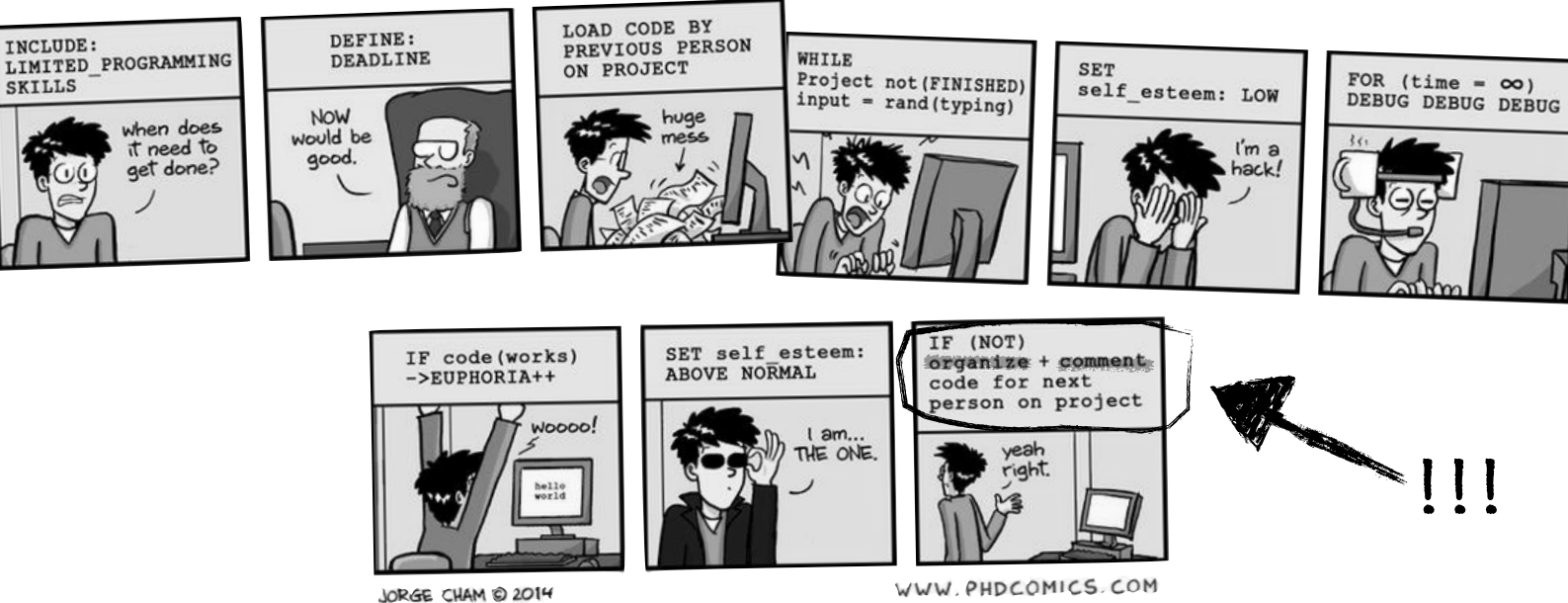
THE SCIENTIFIC METHOD



THE ACTUAL METHOD



PROGRAMMING FOR NON-PROGRAMMERS



AND WE ARE LOOSING KNOWLEDGE FAST...

Most Scientific Research Data From the 1990s Is Lost Forever

A new study has found that as much as 80 percent of the raw scientific data collected by researchers in the early 1990s is gone forever, mostly because no one knows where to find it.



THIS IS NOT A TECHNOLOGICAL PROBLEM, IT'S AN INCENTIVES AND SCIENTIFIC CULTURE PROBLEM

How to change this?

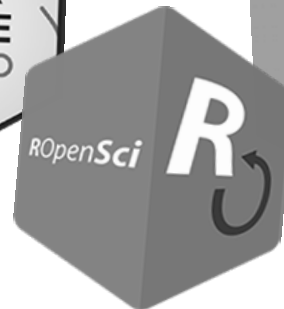
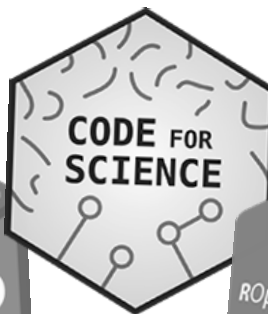
- Make scientist and funders care!
- Release your code, data, docs on [Github.com](https://github.com), figshare.com, etc...
- Use Open licenses
check choosealicense.com and creativecommons.org
- Publish open access, use preprint servers
arxiv.org, biorxiv.org, etc...
- Be more informed about this

PEOPLE CHANGING IT



mozilla

Science Lab



software carpentry

STAND BACK



**I'M GOING TO TRY
SCIENCE**

A C F I O W I E d g m e n

MOZILLA SCIENCE LAB

LEONA M. AND HARRY B.

HELMSLEY CHARITABLE TRUST,

WURMLAB, QUEEN MARY U. LONDON

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