Reproducible Research

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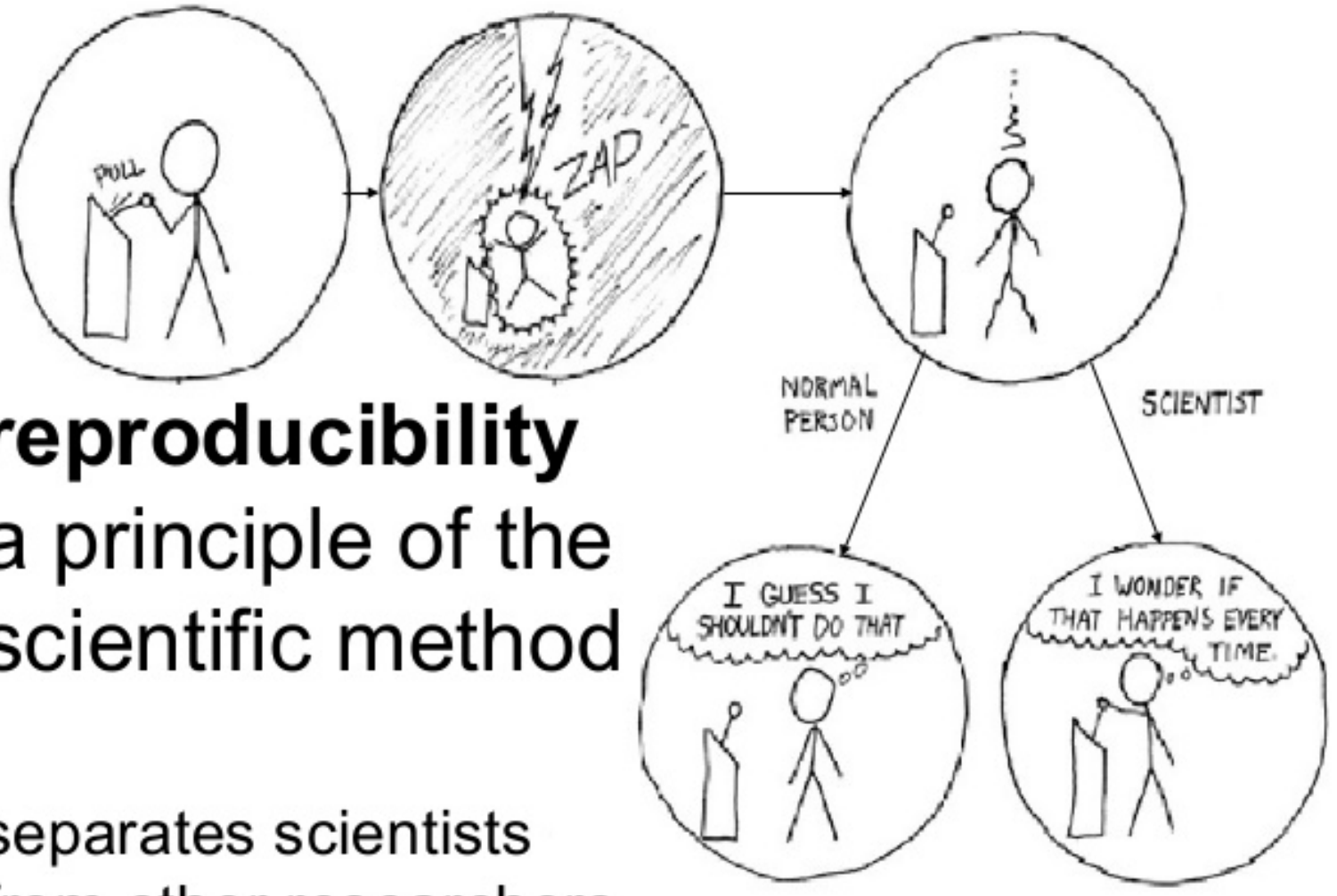
Overview

Introduction

Replication is the ultimate standard by which scientific claims are judged
The fact that an analysis is reproducible does not guarantee the quality, correctness, or validity of the published results.

What reproducible research is

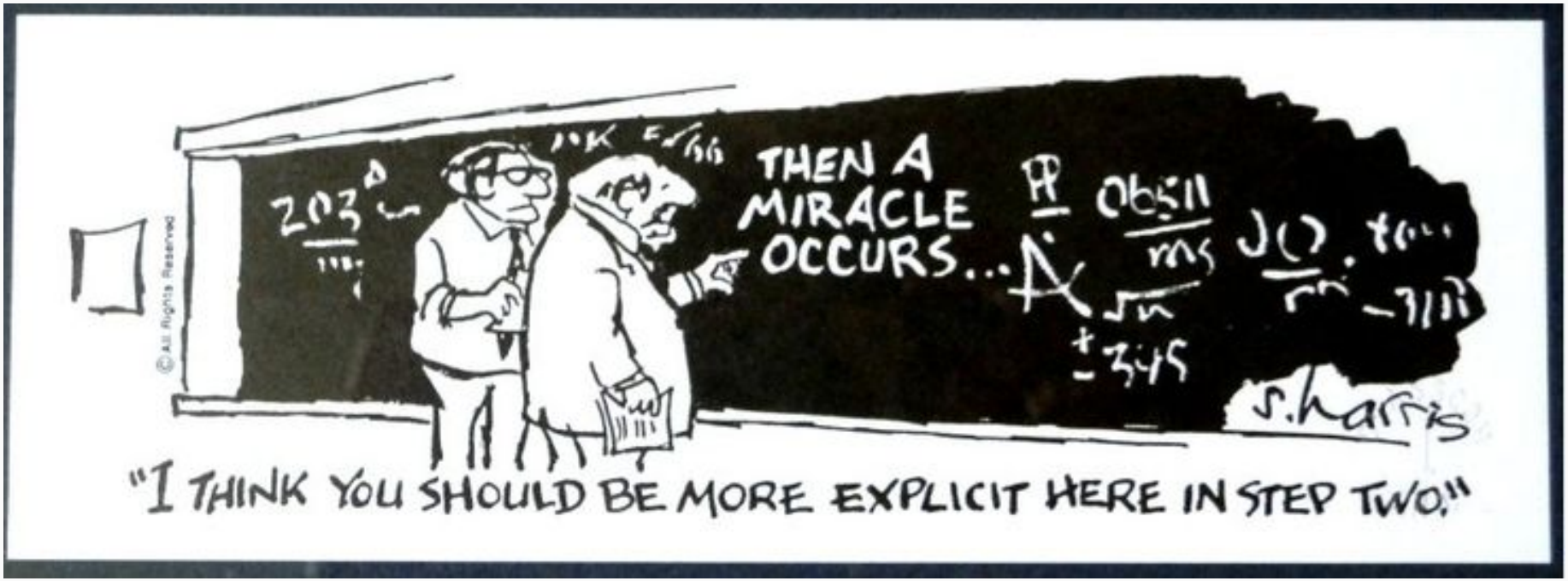


reproducibility
a principle of the scientific method

separates scientists from other researchers and normal people

http://xkcd.com/242/

What reproducible research is



- This is exactly how it seems when you try to figure out how authors got from a large and complex data set to a dense paper with lots of busy figures.
  Without access to the data and the analysis code, a miracle occurred.
- And there should be NO MIRACLES IN SCIENCE.

What reproducible research is

$$DATA + ANALYSIS \rightarrow RESULTS$$

Reproducible vs Replicable

		DATA	
		Same	Different
CODE	Same	Reproducible	Replicable
	Different	Robust	Generalisable

Bullet Points

Does reproducibility sound like extra work? It can be, particularly when one is first trying to do it, that is, to break one's own previous nonreproducible habits

- Lorem ipsum dolor sit amet, consectetur adipiscing elit
- Aliquam blandit faucibus nisi, sit amet dapibus enim tempus eu
- Nulla commodo, erat quis gravida posuere, elit lacus lobortis est, quis porttitor odio mauris at libero
- Nam cursus est eget velit posuere pellentesque
- Vestibulum faucibus velit a augue condimentum quis convallis nulla gravida

Blocks of Highlighted Text

Block 1

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Block 2

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Block 3

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Multiple Columns

Heading

1. Statement
2. Explanation
3. Example

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Second Section

Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 1: Table caption

Theorem

Theorem (Mass–energy equivalence)

$E = mc^2$

Verbatim

Example (Theorem Slide Code)

```
\begin{frame}
\frametitle{Theorem}
\begin{theorem}[Mass--energy equivalence]
$E = mc^2$
\end{theorem}
\end{frame}
```

Figure

Uncomment the code on this slide to include your own image from the same directory as the template .TeX file.

Citation

An example of the `\cite` command to cite within the presentation:

This statement requires citation **?**.

References

The End