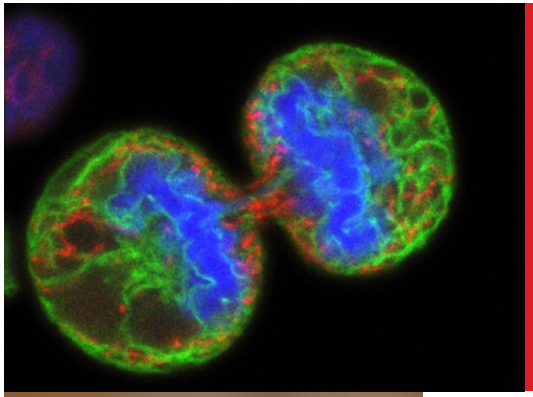
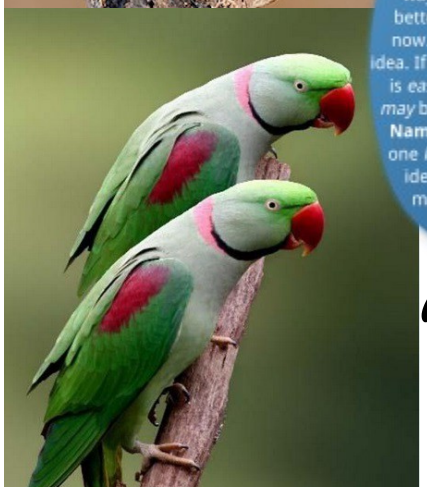
Your handy dandy guide to generalisable research

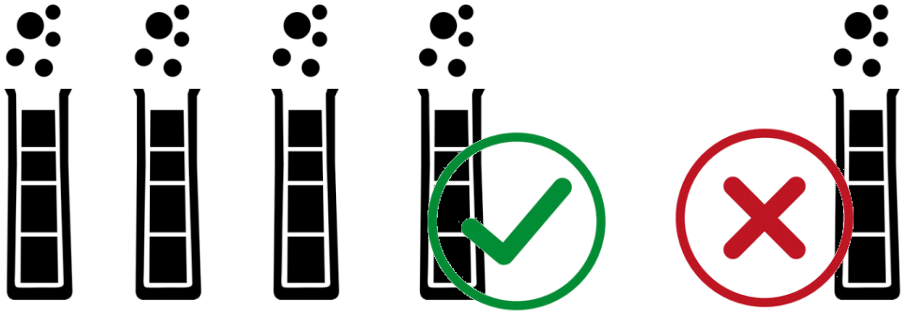
	Data	Code
Different	Generalisable	Same
Same	Robust	Different
Different	Replicable	Same
Same	Reproducible	Same





What is generalisable research?

And why do we need it?



mozilla Science Lab

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Mozilla Fellow for Science 2016/17
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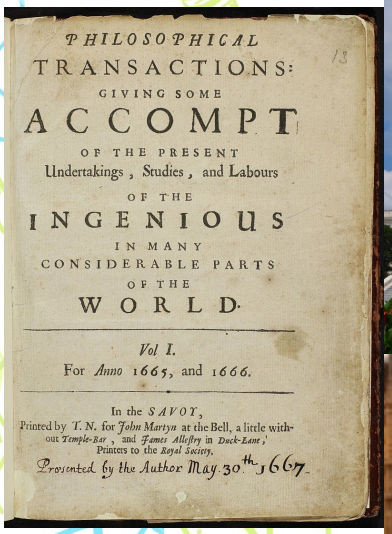
The way academia currently works is that **scientists do lots and lots of work** and then **publish their work in journals** to share their findings with others.

Originally they were visited in person by other researchers...

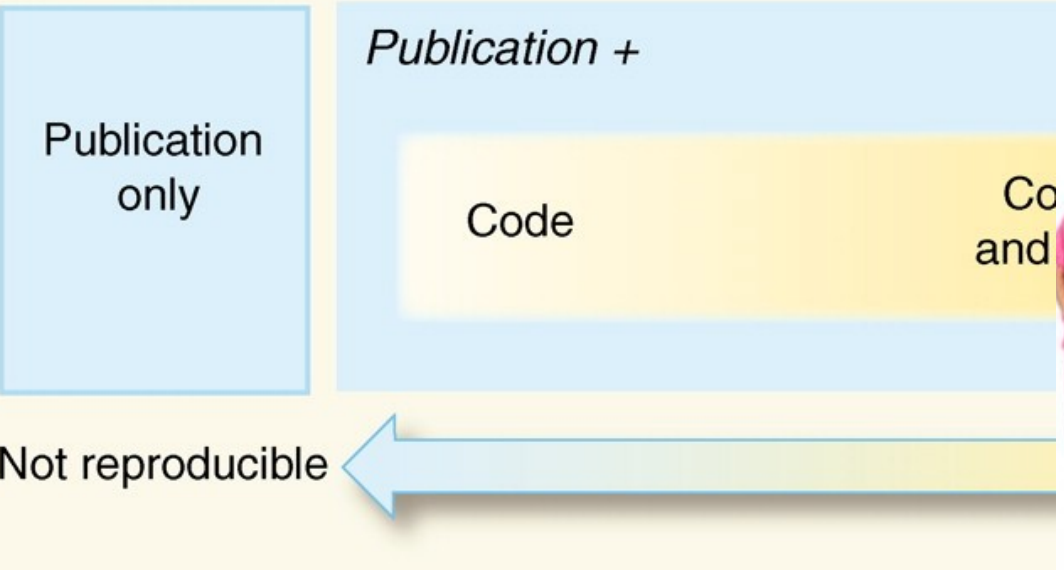

PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane, Printers to the Royal Society.
Presented by the Author May 30th 1667

But nowadays its very difficult to know **exactly** what people did! It isn't standard to share data or detailed instructions!

need generalisable research to make useful policies, and **doctors** need it to know how best to treat you!



There are lots of ways to skin a cat!

(But don't worry, this one was born this way!)

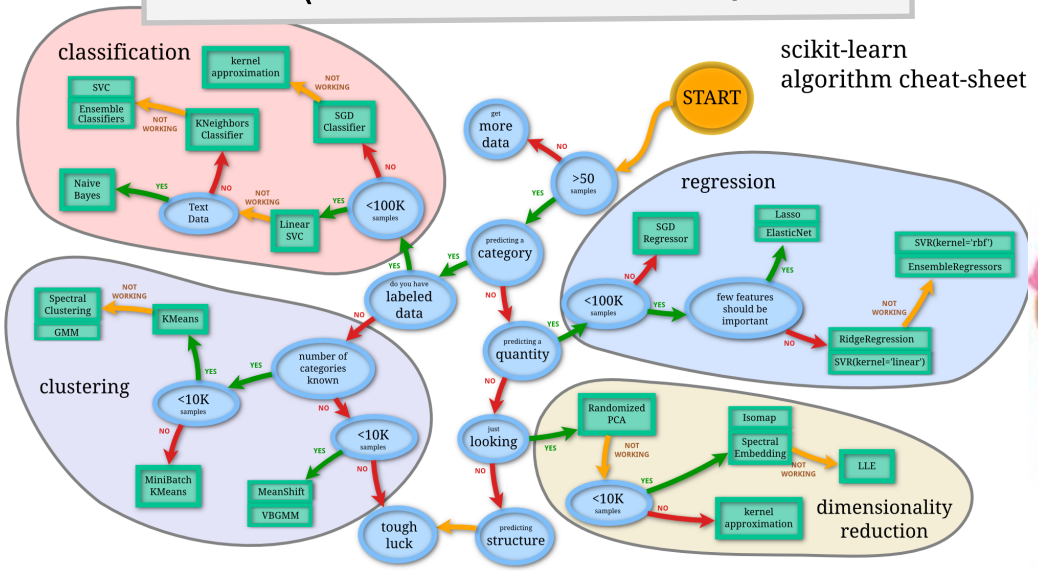
JARGON BUSTIN'

Research is ROBUST if you conclude

the same answer even when you

use different analysis techniques

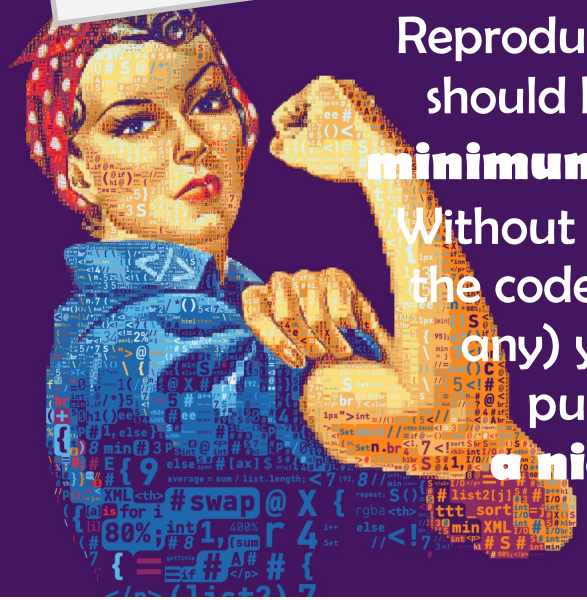
(on the same data set)



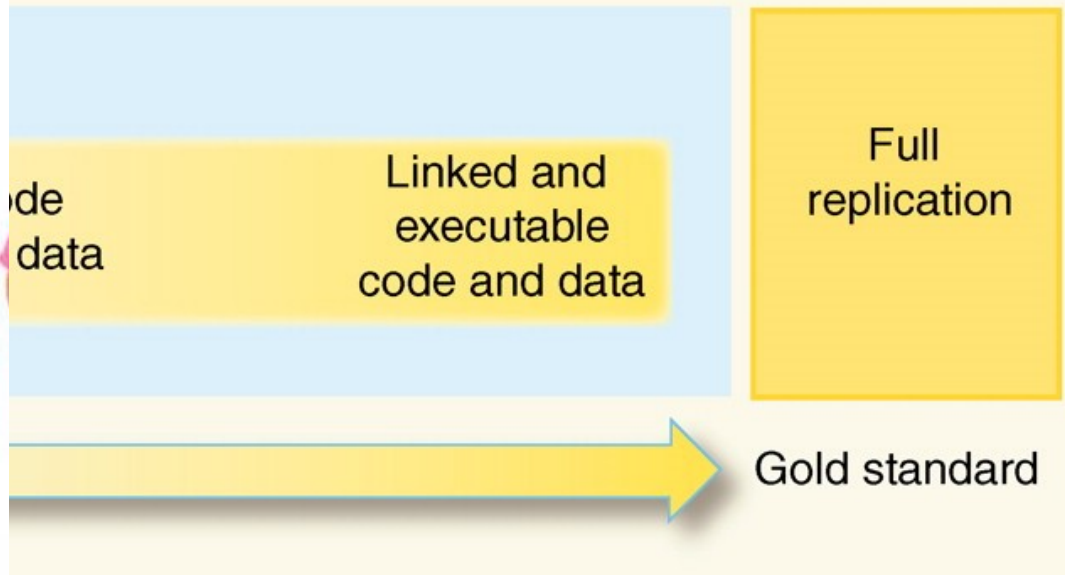
scikit-learn algorithm cheat-sheet

JARGON BUSTIN'

Research is REPRODUCIBLE if independent scientists can get exactly the same results when you give them your data



Reproducible research should be the **bare minimum** requirement! Without the data and the code (if you used any) you're only publishing **a nice story.**



Blindsight is when people who can't consciously see can accurately guess what's around them.

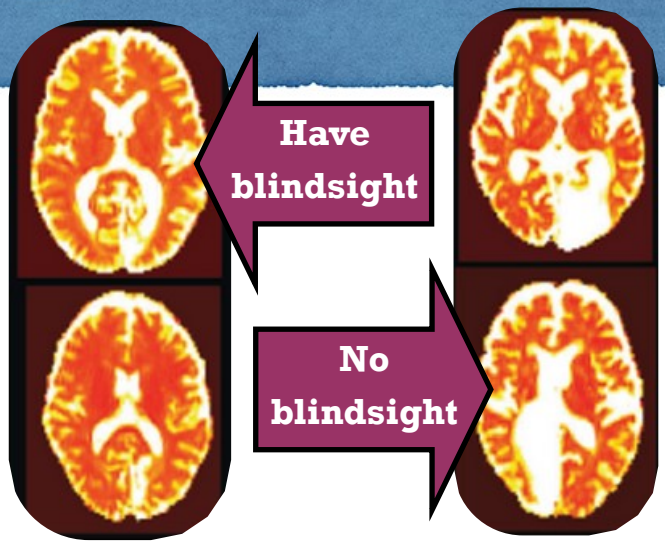
Some blind people can even walk around avoiding obstacles. (Even though when you ask them they say they don't know what's there!)

The original authors found evidence for blindsight...

...but recently other scientists didn't replicate the finding.

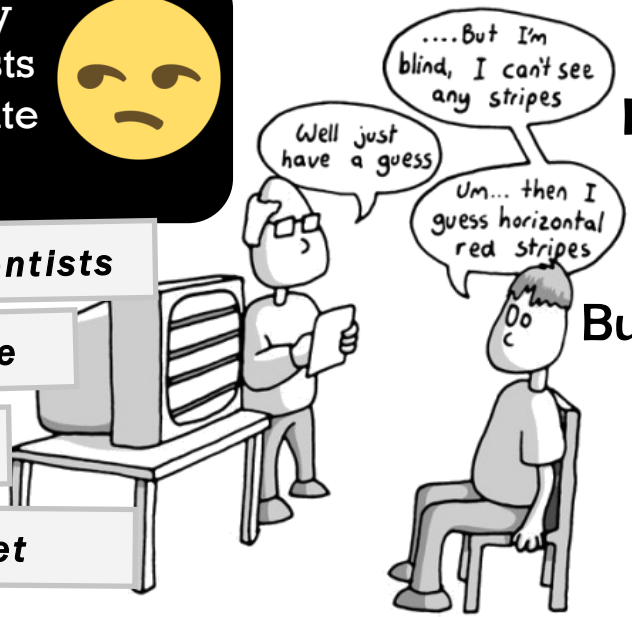
But knowing these conflicts means we **can refine our understanding**.

Maybe it depends on what type of brain damage the patients have!?



JARGON BUSTIN'

Research is REPLICABLE if other scientists (or you!) conclude the same message when the follow your exact analysis but using an independent data set



It's ok if we don't replicate everything! It doesn't mean anyone is lying.

But it is important to know if the finding only works for the original data.

Otherwise we can't begin to **generalise** the finding.