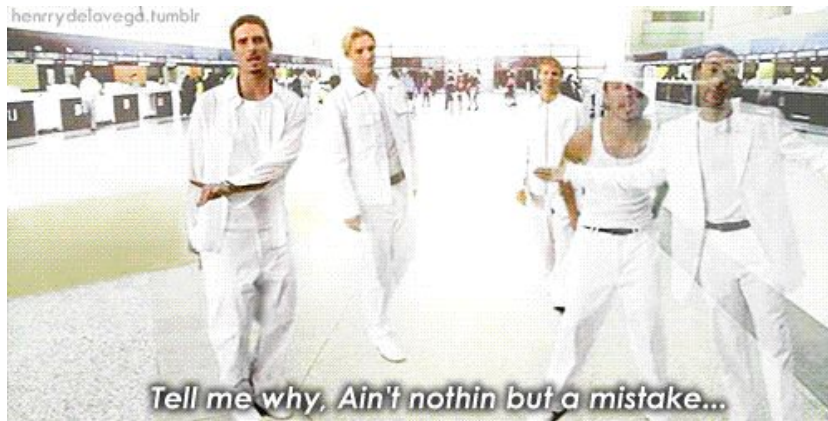


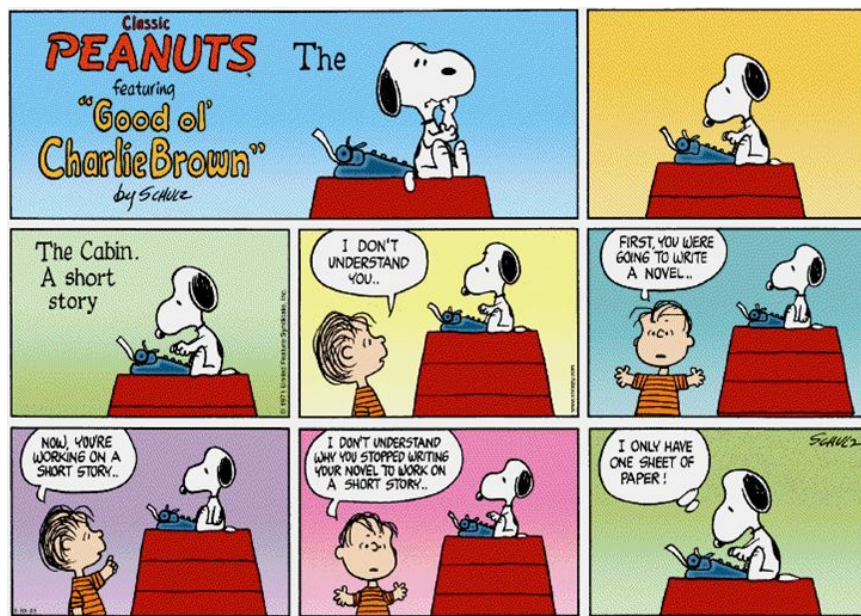
# Causality and the scientific project

Week 5: Research Methods

**Why causality?**



"HE JUST LOOKS TALLER THAN ME  
BECAUSE HE WALKS UPRIGHT!"



## The Economist

Recession roulette

The Rubicon of Russia's war crimes

Lockdown in Shanghai

What follows the smartphone?

APRIL 9TH-15TH 2022

### Why Macron's fate matters beyond France


**...*BECAUSE* causal language  
is everywhere!**

**but also because...**

...ANSO folks make causal  
claims all the time.

Can we ask about reasons?

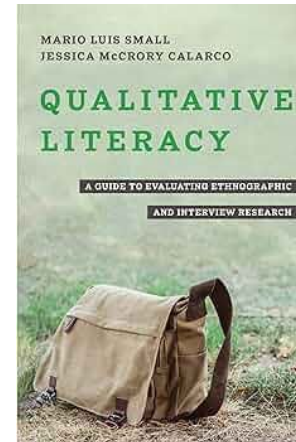
Can we observe reasons?

 Available access | Research article | First published online March 17, 2021

Using Interviews to Understand Why: Challenges and  
Strategies in the Study of Motivated Action

[Mario L. Small](#)   and [Jenna M. Cook](#)  [View all authors and affiliations](#)

[OnlineFirst](#) | <https://doi.org/10.1177/0049124121995552>



...one final reason

# ...maybe it's part of what our disciplines ought to be doing?

ORIGINAL ARTICLE |  Open Access | 

## Unveiling power, or why social science's task is explanation

Julian Go 

First published: 04 October 2023 | <https://doi.org/10.1111/1468-4446.13056>

 SECTIONS

 PDF  TOOLS  SHARE

### Abstract

This short essay contends that sociology should devote attention to causal explanation in order to expose lies. It argues that lies about causes are common in society and social science is in a unique privileged position to offer social knowledge that can dispel such lies. Offering causal explanations is a vital task of this project.

... maybe it is the whole “scientific project”?

# The Scientific Project

- **Popperian**: *science as the scientific method*; progress is the slow piling up of theories that survive attempts of falsification.
- **Kuhnian**: *science as the community of scientists*; and progress happens in spaces excluded from it.
- **Mertonian**: *science as normative values*; (i) universalism, (ii) disinterestedness, (iii) communalism, and (iv) organized skepticism.



Restricted access

Research article

First published April 2004

# What is Originality in the Humanities and the Social Sciences?

[Joshua Guetzkow](#), [Michèle Lamont](#) , and [Grégoire Mallard](#) [View all authors and affiliations](#)

[Volume 69, Issue 2](#)

<https://doi.org/10.1177/000312240406900203>

## Styles of Causal Thought: An Empirical Investigation<sup>1</sup>

[Gabriel Abend](#), [Caitlin Petre](#), and [Michael Sauder](#)



PDF



PDF PLUS



Abstract



Full Text

## The rise of randomized controlled trials (RCTs) in international development in historical perspective

[Luciana de Souza Leão](#)  & [Gil Eyal](#)

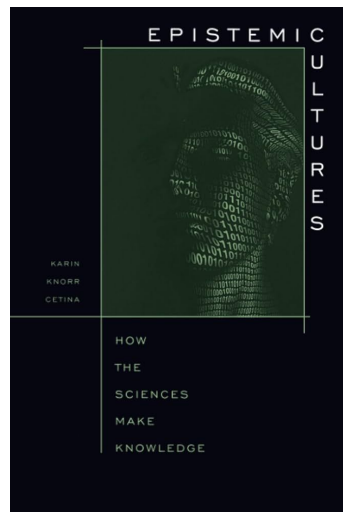
[Theory and Society](#) **48**, 383–418 (2019) | [Cite this article](#)



### How Professors Think

Inside the Curious World of Academic Judgment

MICHÈLE  
LAMONT





**Causality because it  
permeates the way  
disciplines and  
practitioners think  
about the world!**

We start slow...

1. Correlation
2. Causation
3. Quant and Qual Causal Research Designs

# Correlation I

- The extent to which two things co-occur together.
- To measure it, we need variation in both things.
- Co-occurrence can be positive or negative.
- Multiple measures: covariance, coefficients, slopes...



# Correlation II

	Great Success	No Great Success
10k hours Practice	Many	Many
Less than 10k hours	Very few	Very few

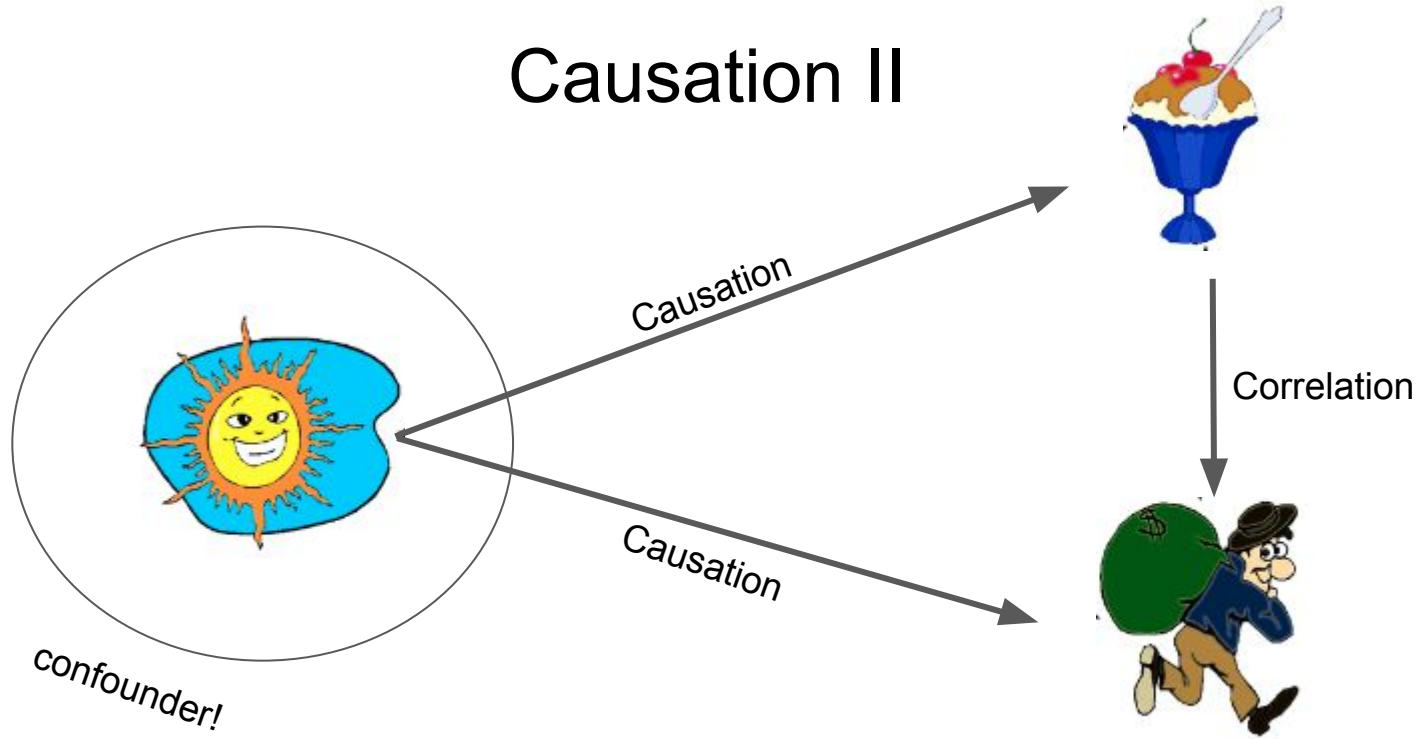
*“Most politicians facing **scandals** win **reelection**”.*

# Causation

- A change in one feature of the world that results from a change in another feature.
- Harder (to some, even impossible) to identify.
- It's about the **mechanism**, i.e. process by which one feature changes another.

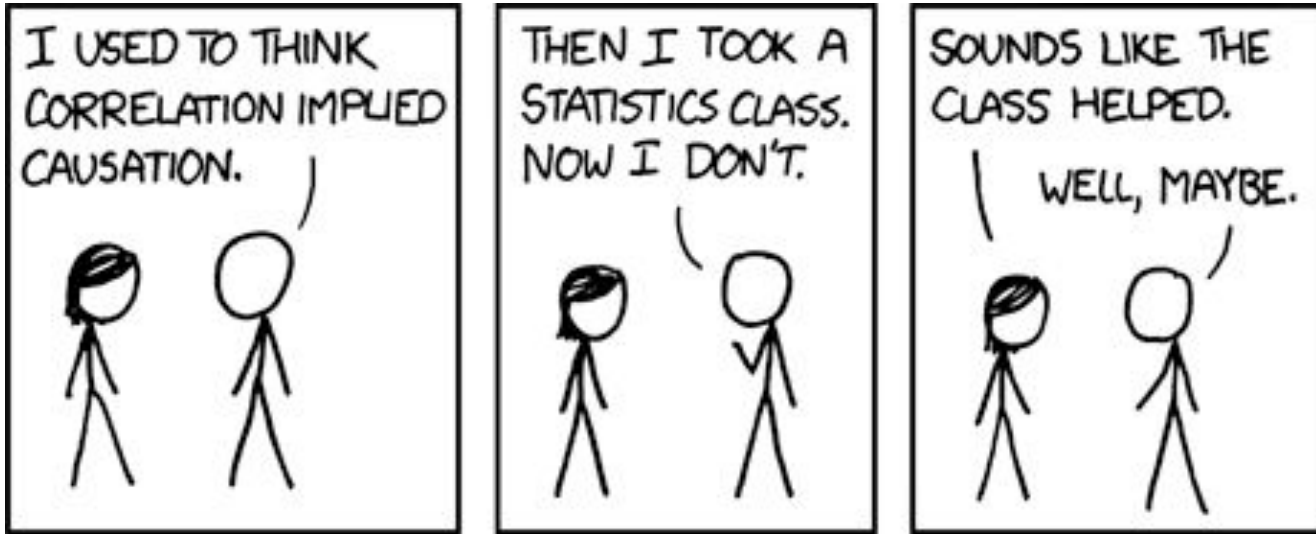


## Causation II



- The connection between sun and theft might go through a **long chain of relationships**, we might establish causality, but not necessarily know the exact **mechanism**.

# On the relationship between causation and correlation



Think about Causality as  
something ***some*** scholars  
strive for, but not  
necessarily **can** reach.



The *fundamental  
problem of causal  
inference* is that...

...we do not have *other  
worlds* to compare  
with...

... but we can imagine  
them!



how?

# Research Designs

# Ladder of Causal Inference



## Level 3: Counterfactual

*Given  $X$  and  $Y$ , what would  $Y$  have been if  $X$  had been different?*

*All else equal, what would my BMI have been if I had started that exercise regime?*

## Level 2: Intervention

*If we force  $X$  to some value, how would that affect  $Y$ ?*

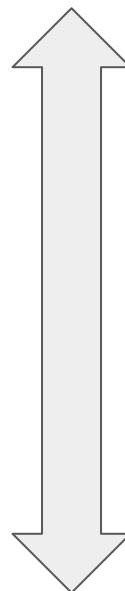
*If we force someone to start an exercise regime, what will be the effect on BMI?*

## Level 1: Association

*Given  $X$ , what is  $Y$  likely to be?*

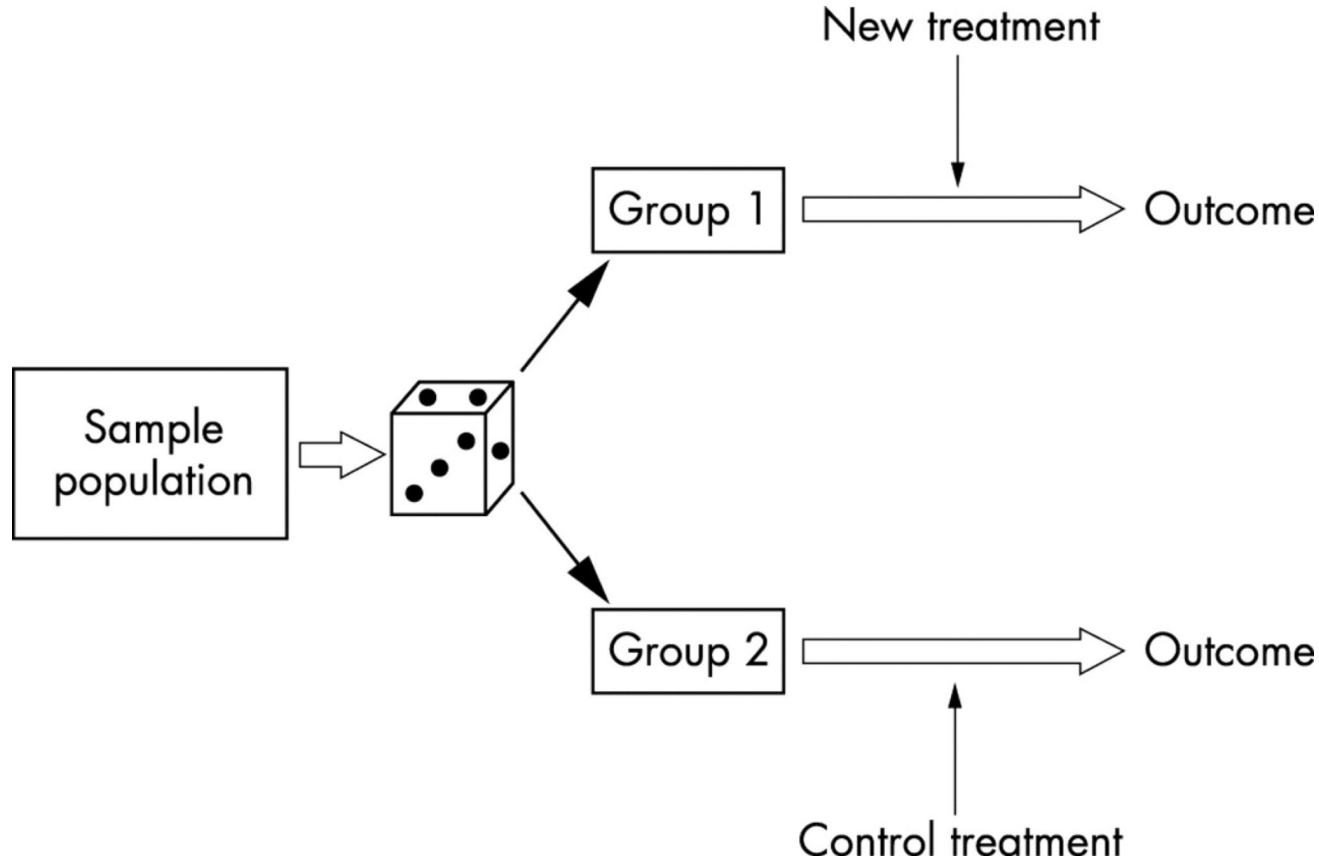
*Given someone on an exercise regime, what BMI are they likely to have?*

**More  
“experimental”  
data**



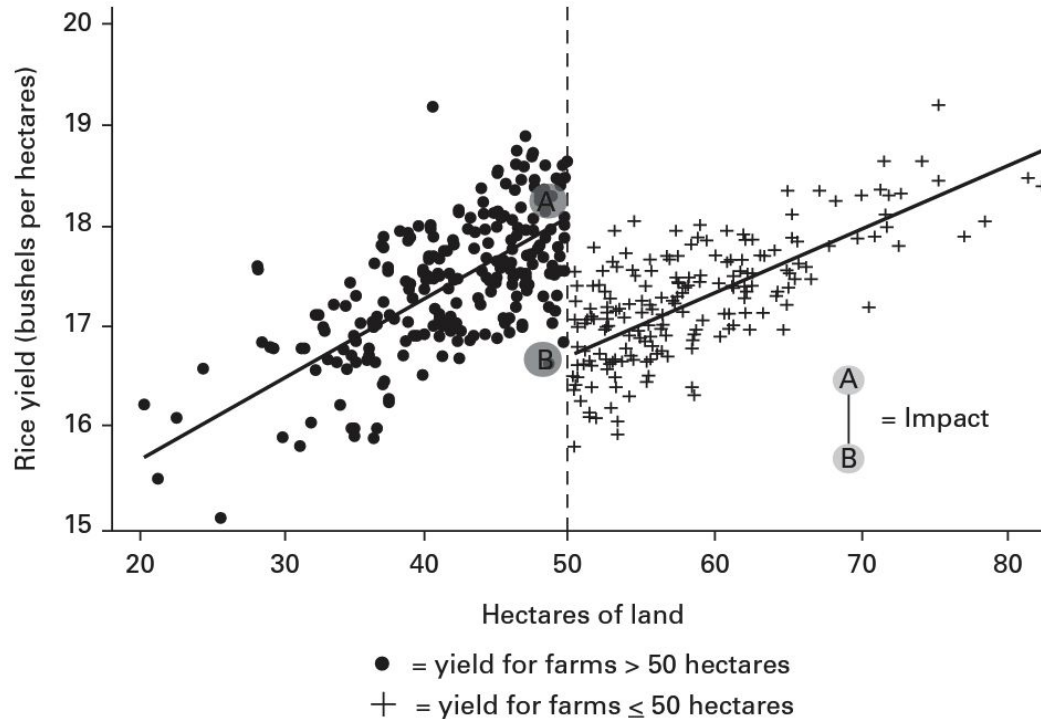
**More  
“observational”  
data**

# Experiments: you **design** random treatments!



# Discontinuity: you find random treatments!

Figure 6.2 Rice Yield, Smaller Farms versus Larger Farms (Follow-Up)



# Synthetic Controls: you **fabricate** random treatments!

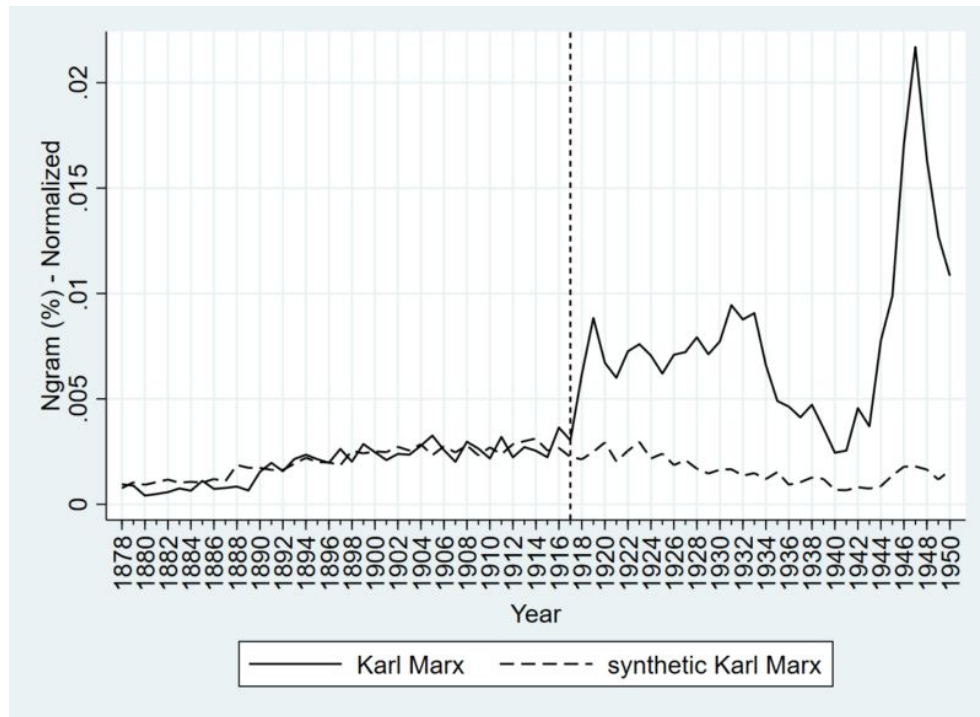
*We hypothesize that the 1917 Russian Revolution is responsible for elevating Marx into the academic mainstream.*

*[...]*

*we can predict how often Marx would have been cited if the Russian Revolution had not happened.*

TABLE 3  
SCM, 1878–1932, ENGLISH: SYNTHETIC AUTHOR  
COMPOSITION

Author	Weight
Ferdinand Lassalle	.520
Rodbertus	.288
Oscar Wilde	.120
Abraham Lincoln	.056
Pasteur	.008
Kelvin	.006
Proudhon	.002



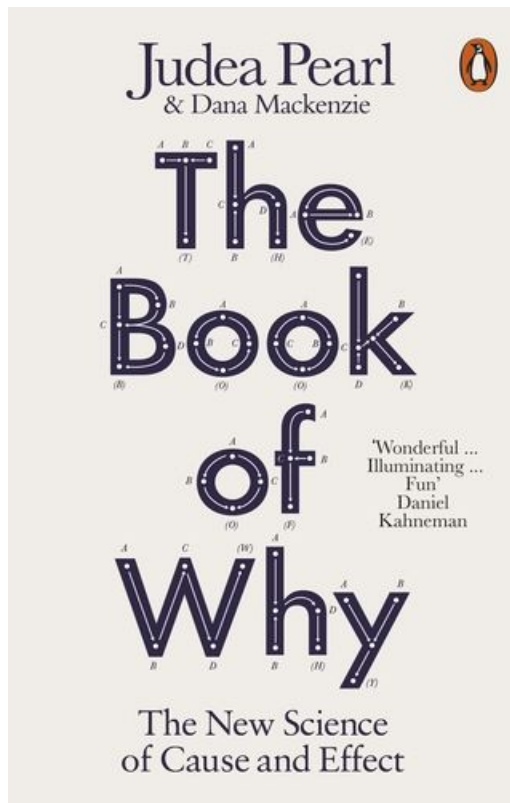
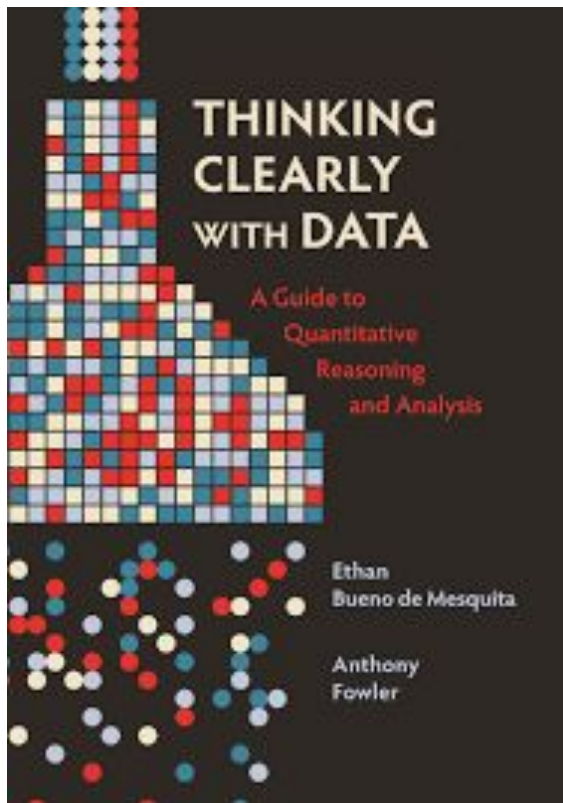


# And many others...

- Instrumental variables
- Differences-in-differences
- Panel data
- Direct acyclic graphs
- Mediation and Moderation
- Matching and subclassification
- ...



# Where to ~~start~~ end?



... but causality can also  
be a question for  
qualitative researchers

# Qualitative data and Causality

- Process-tracing and causal tests ([Collier 2011](#))
  - Straw-in-the-wind
  - Smoking-Gun
  - Hoop
  - Doubly decisive
- Bayesian Inference ([Fairfield, 2017](#))
  - Mentally inhabit the world of each possibility in light of information you collect.



and for practitioners!