# Introduction to Political Science Research Methods

POLS 209

You don’t need to write anything down, just listen and engage.

Slides and notes are posted.

# About the Course

www.carlisleraineyc.com

# My Motivation

questions, not methods

Questions you care about

Quantities you care about

Relevant data

Tools you can use later

# Topics

- voting in the Weimar Republic
- racial discrimination
- social pressure to vote
- conditional cash transfers and incumbent support
- minimum wage and unemployment
- public opinion in Afganistan

# Topics

- forensic investigations into academic fraud
- political polarization
- pre-election polling
- betting markets
- facial appearance and election outcomes
- women as policy makers

# Topics

- the authorship of the Federalist papers
- who politicians follow on Twitter
- expansion of Walmart
- spatial patterns of U.S. presidential elections

# Learn by doing.

1. You read.
2. You practice.
3. We work through difficulties together.

# We'll learn data science.

Silicon Vally, Wall Street, Washington D.C.

"I keep saying that the sexy job in the next 10 years will be statisticians, and I'm not kidding."

– Hal Varian, chief economist at Google

# We'll Learn R

"It is becoming their lingua franca [...] whether being used to set ad prices, find new drugs more quickly or fine-tune financial models. Companies as diverse as Google, Pfizer, Merck, Bank of America, the InterContinental Hotels Group, and Shell use it."

–New York Times

## Qualifications

Analysts should have

- Experience with data analysis in an academic or professional setting, preferably including experimental design and experimental data
- Experience with either R (preferred) or Stata - we use both
- Excellent writing skills
- The ability to learn new skills quickly on the job
- An interest in progressive politics and political activism

- code: randomly pair students [gist]

Sep 3: No class (APSA meeting)

Sep 8: Models

- practice: problems on questions [pdf]
- read: Lave and March, chs. 1-3 [pdf on eCampus]
- practice: problems on models [pdf]
- lecture: model building exercises

Sep 10: Computing, Part 1

- read: *QSS*, sections 1.3-1.3.4
- practice: problems on computing, 1-x

Sep 15: Computing, Part 2

How many of you have laptops? Chromebooks?

# *A First Course in Quantitative Social Science*, by Kosuke Imai

| Assignment | Points |
|---|---|
| Writing Assigment 1 | 10 points |
| Writing Assignment 2 | 10 points |
| Midterm | 15 points |
| Writing Assignment 3 | 15 points |
| Writing Assignment 4 | 15 points |
| Final | 25 points |
| Pop Quizzes | 10 points |
| Participation | up to 5 bonus points |

# Collaboration

On the writing assignments, do not, under any circumstance, copy another person's code.

**late work**

missed exams

late writing assignments

# Questions and Claims

Political scientists ask all sorts of **questions** about politics.

## About Marriage Equality

- What percent of the public supports marriage equality?

- What explains the recent increase in support for marriage equality?

- Should gay and lesbian couples have the same right to marry as heterosexual couples?

## About Income Inequality

- Is income inequality higher or lower in the U.S. than France?
- What are the consequences of income inequality?
- Should the government redistribute wealth?

Political scientists make all sorts of **claims** about politics.

Claims are just answers to questions.

## About Marriage Equality

- 54% of the public supports marriage equality.

- Court decisions explain the recent increase in support for marriage equality.

- Gay and lesbian couples should have the same right to marry as heterosexual couples.

## About Income Inequality

- Income inequality is higher in the U.S. than France.
- Income inequality causes a slower growth rate.
- The government should not redistribute wealth.

The best approach to **answering a question** depends on the type.

# Three types of questions/claims

descriptive

causal (explanatory)

normative (evaluative)

# Descriptive

What does the world look like?

Asks you to observe a fact.

# Causal

Why does the world look the way it does?

Asks you to identify a cause or an effect.

# Normative

What should the world look like?

Asks you to make a moral judgement.

## About Marriage Equality

- What percent of the public supports marriage equality? Descriptive

- What explains the recent increase in support for marriage equality? Causal

- Should gay and lesbian couples have the same right to marry as heterosexual couples? Normative

## About Income Inequality

- Is income inequality higher or lower in the U.S. than France? Descriptive

- What are the consequences of income inequality? Causal

- Should the government redistribute wealth? Normative

# Normative Questions

The Way Most People Think About Politics

conservative or liberal?

# Republican or Democrat?

# Fox News or MSNBC?

# Hannity or Maddow?

pro-life or pro-choice?

# pro-equality or pro-family?

right or wrong?

good or evil?

Normative questions are important.

# Should the U.S. go to war with Iran?

# Should the President have the authority to declare U.S. citizens enemy combatants?

Should women have the right to choose?

Should the government redistribute wealth?

Answers rely on logic and reasoning.

We will <u>not</u> focus on this type of question.

# Descriptive Questions

How many chambers does the Swedish legislature have?

What percent of voters voted for Barack Obama in 2008?

How many political parties are there in the U.K.?

What percent of countries today are democracies? How has this changed over time?

Answers rely on observation and measurement.

# Causal Questions

Why is income inequality so high in the U.S.? Why is it growing so fast at the moment?

# What causes war between two countries?

# Why do some states become democracies while others remain authoritarian?

# What is the effect of an independent court of last resort?

# What is the effect of an independent court of last resort?

# Three Types of Questions/Claims

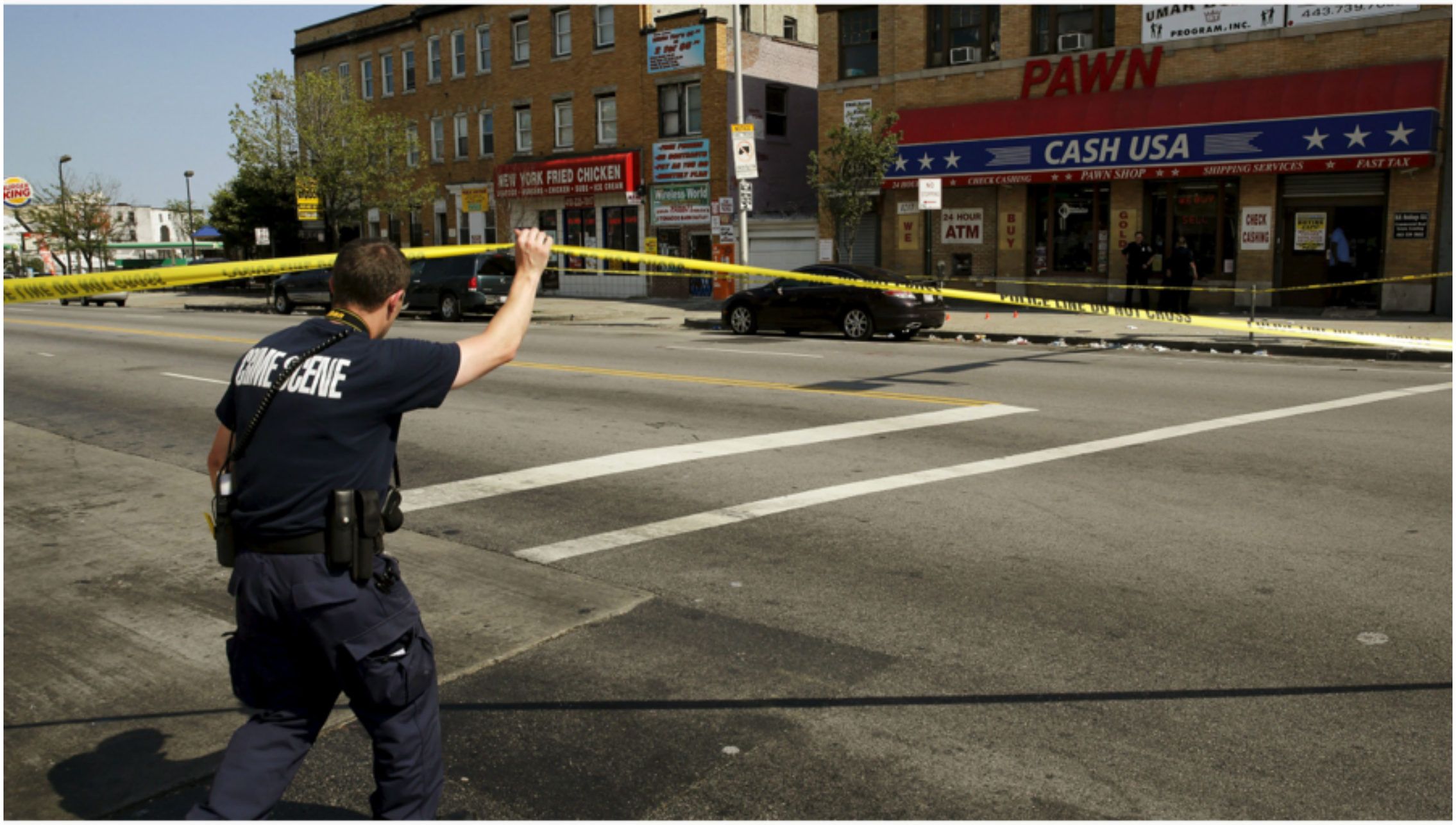
descriptive

causal (explanatory)

normative (evaluative)

MURDER MYSTERY

# Murder rates are rising across America—but nobody knows why




More of these scenes this year than last. (Reuters/Jim Bourg)

# Exercise

- Consider the concept of war. Come up with two examples each of normative, descriptive, and causal questions about war. Posit an answer to these questions as a claim.

But we've got a **major** problem.

# The Fundamental Problem of Causal Inference

We often use the word “cause.”

Smoking

***causes***

cancer.

Democracy

***causes***

peace.

Wealth

***causes***

democracy.

Education ***causes*** turnout.

# But what does “cause” mean?

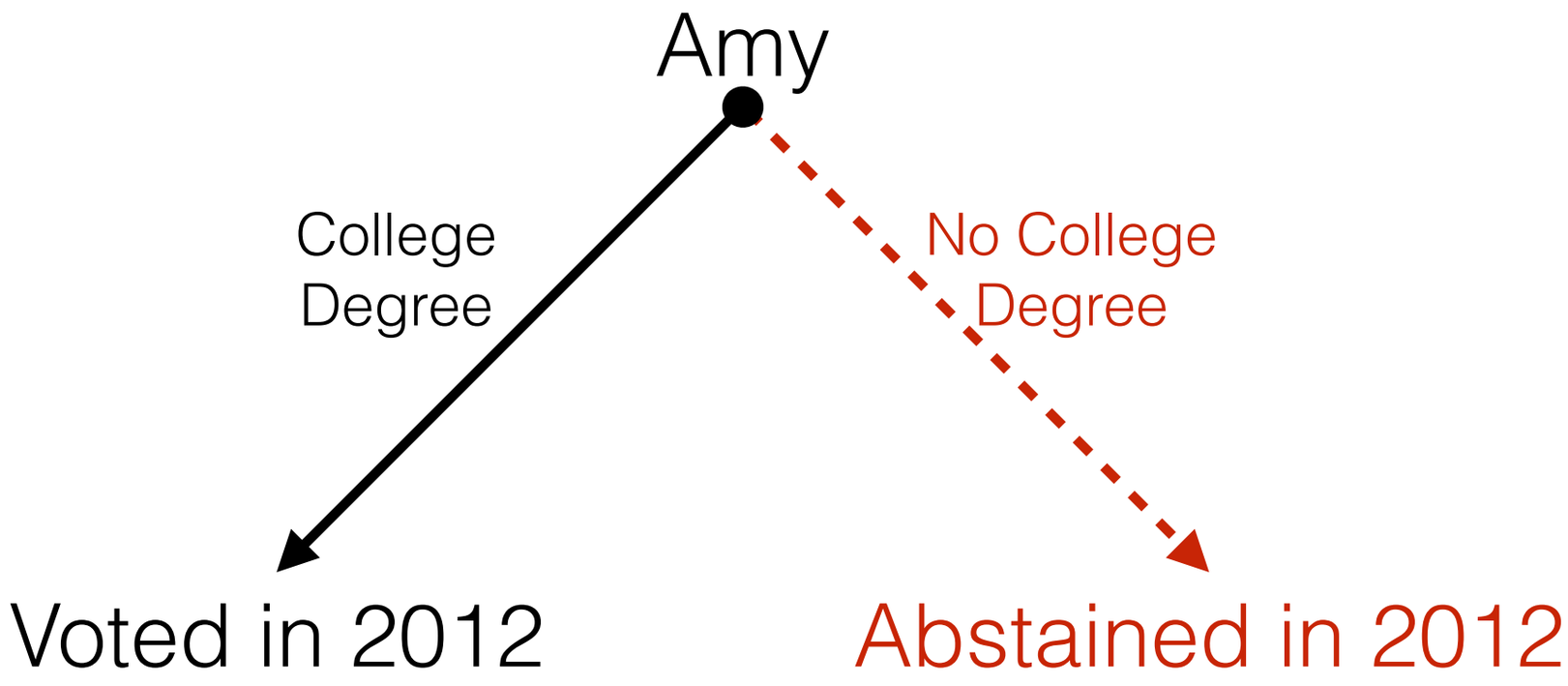
# What does it mean for something to “cause” something else?

Causation relies on the notion of a counterfactual.

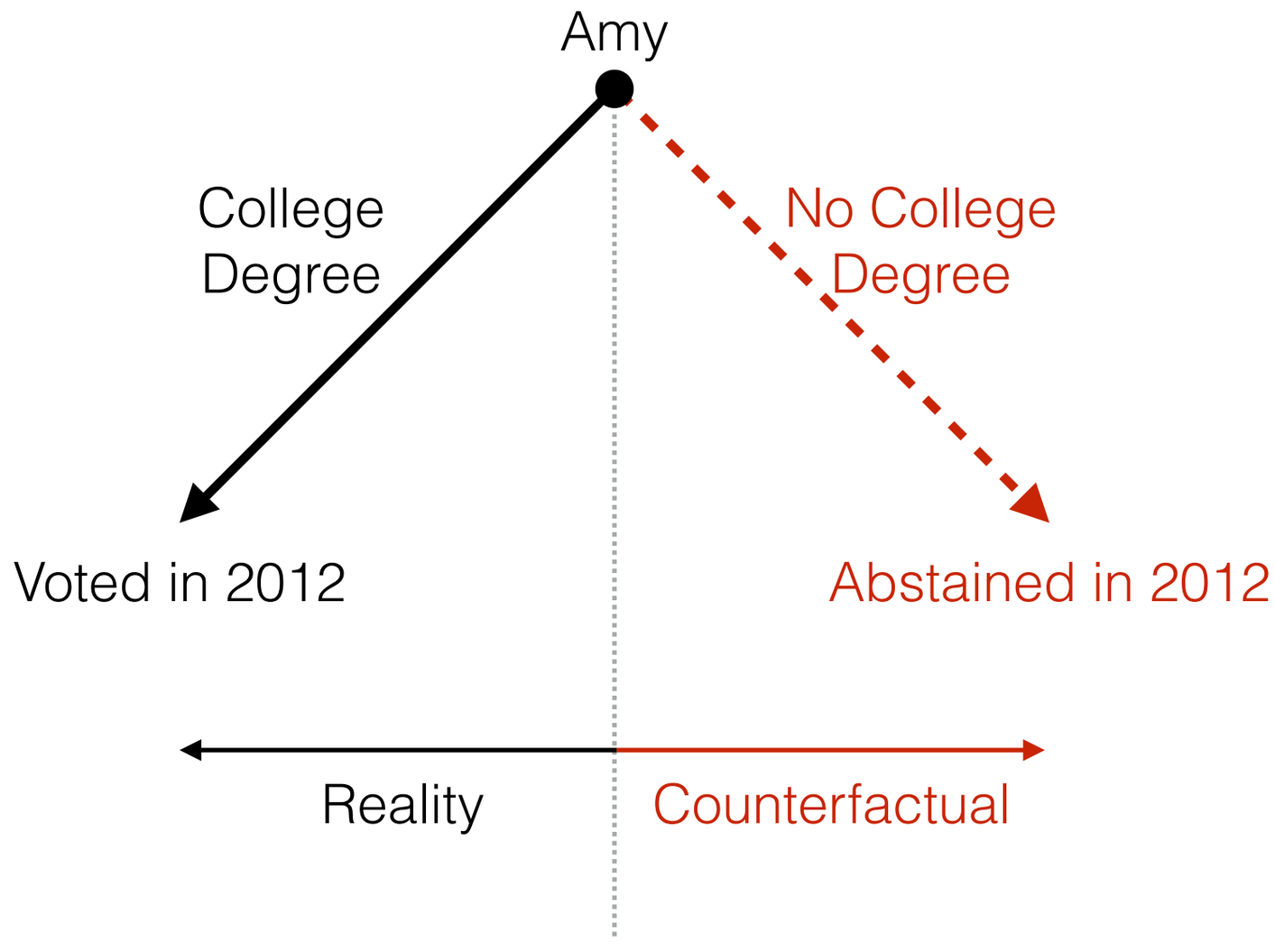
# Counterfactual Analysis

- Suppose Amy has a college degree and voted in 2012.
- We want to know if the college degree caused Amy to vote.
- In order to answer, we simply need to consider the counterfactual world in which Amy did not receive a college degree.
- We might imagine rewinding time and simply removing Amy's opportunity to attend college (but nothing else), the letting time move forward to 2012 and observing whether Amy votes.
- If Amy does not vote in the counterfactual world, then we say that the college degree caused Amy to vote.
- If Amy does vote in the counterfactual world, then we say that the college degree did not cause Amy to vote.

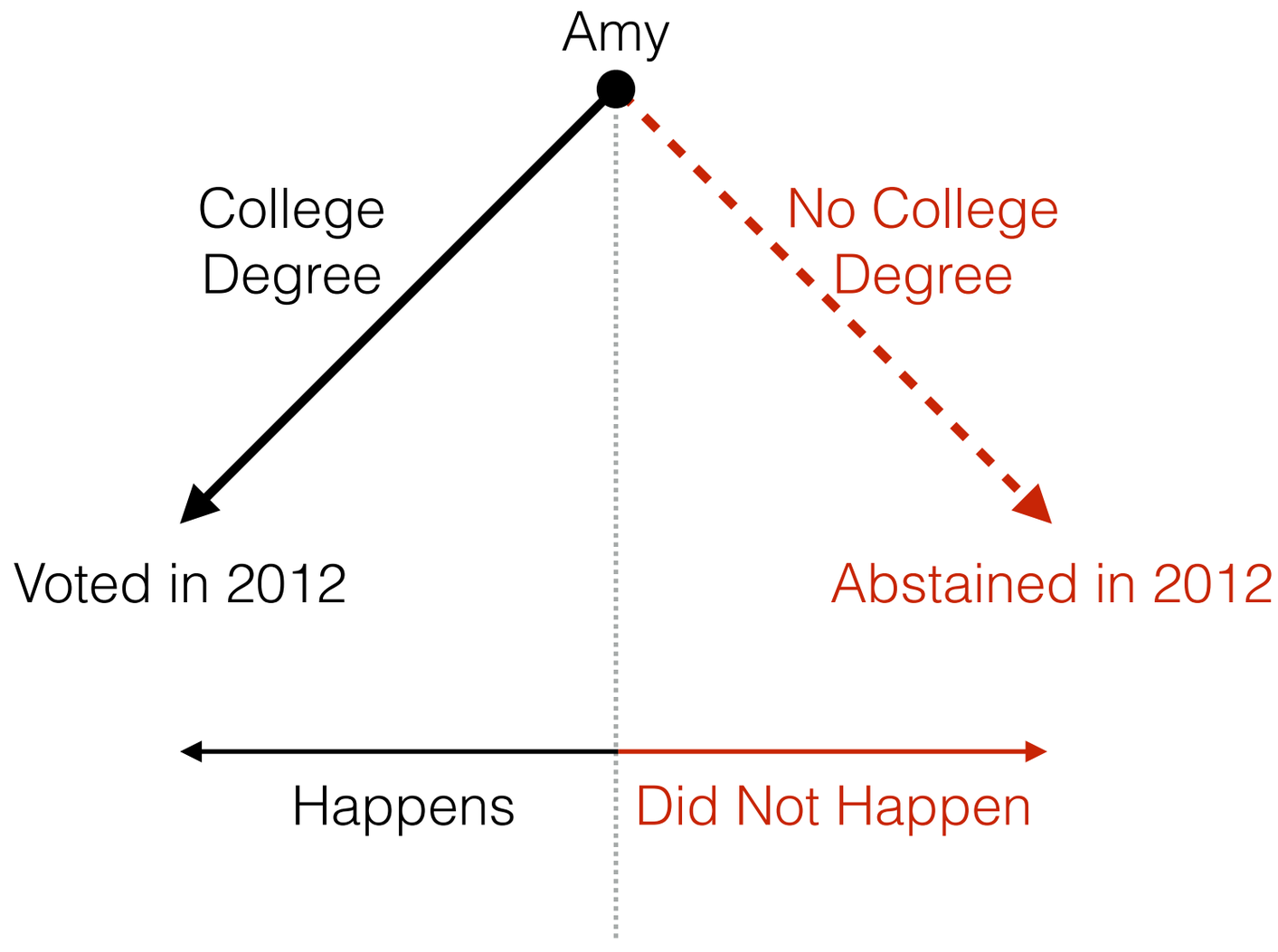
# Counterfactual Analysis



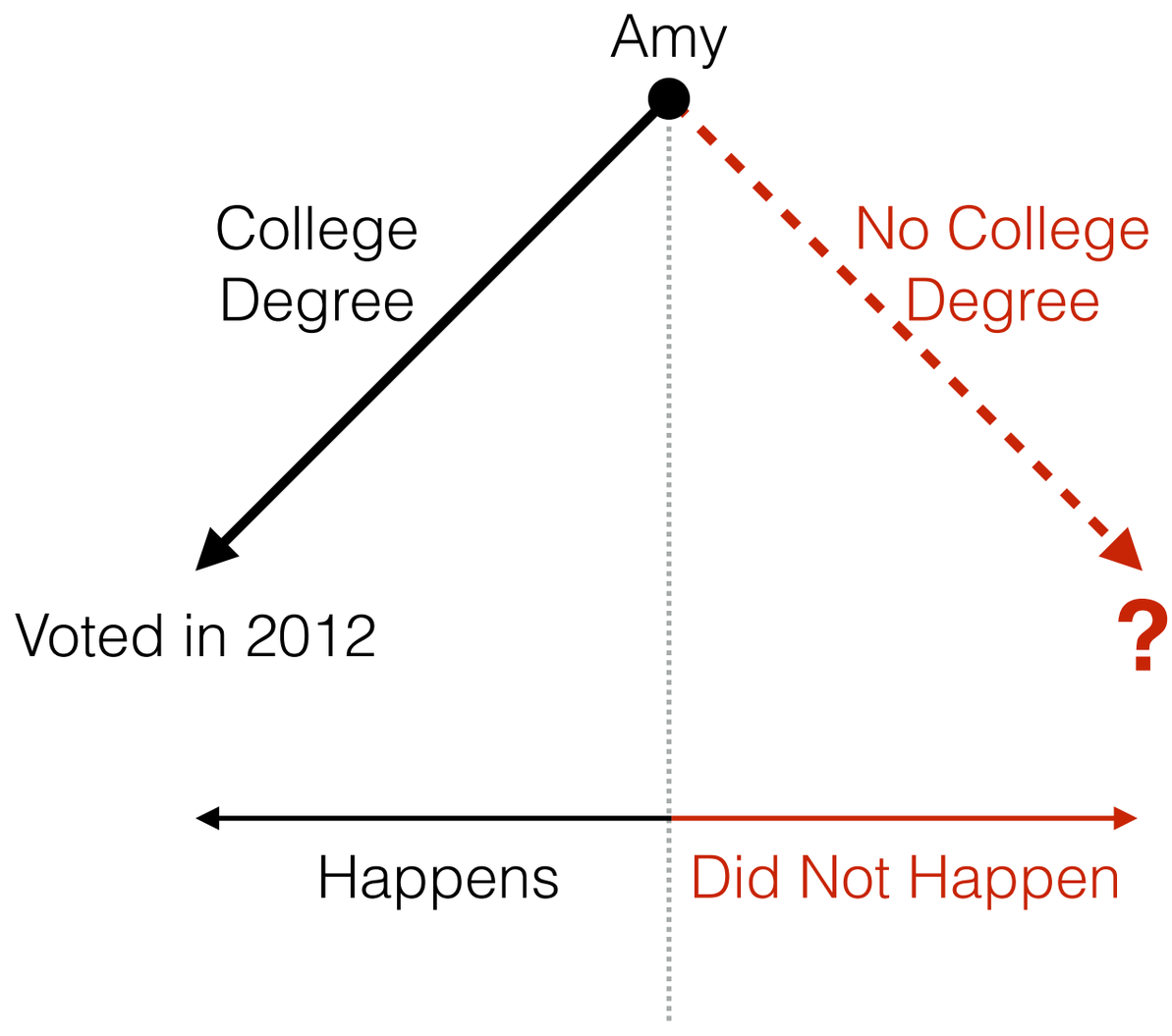
# Counterfactual Analysis



# Counterfactual Analysis

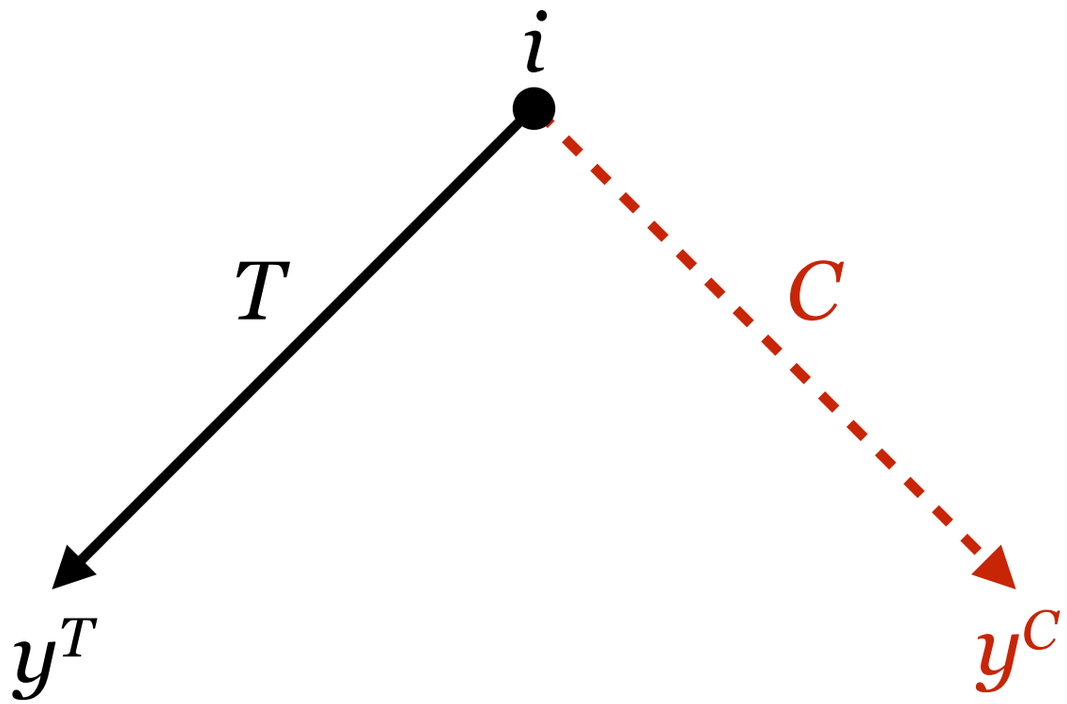


# Counterfactual Analysis



We cannot observe whether Amy's eduction caused her to vote, because we cannot observe the counterfactual.

# Counterfactual Analysis




Effect of $T$ is $y^T - y^C$ .

If $\boldsymbol{y^T - y^C = o}$ or $\boldsymbol{y^T = y^C}$, then $\boldsymbol{T}$ does not cause $\boldsymbol{y}$. $\boldsymbol{T}$ has no effect.

If $y^T - y^C \neq \boldsymbol{o}$ or $y^T \neq y^C$, then $T$ does cause $y$. $T$ has an effect.

# The fundamental problem of causal inference.

- We cannot observe the causes of an outcome.
- We cannot observe the effects of (potential) causes.

Answers rely on observation, measurement, clever design, and models.

We can think of models as an elaboration of a causal claim.

# Before Next Class

- Realize that we have no class on Thursday.
- Do practice problems on questions.
- Reach Lave and March, chs. 1-3 (eCampus)
- Do practice problems on models.