Theorizing and Hypothesizing

Understanding Political Numbers

Jan 30, 2019

Agenda

Schedule

Review empiricism, induction fallacy, falsification

Math lesson: functions

Theory & Hypotheses (in the scientific method)

Voter turnout example

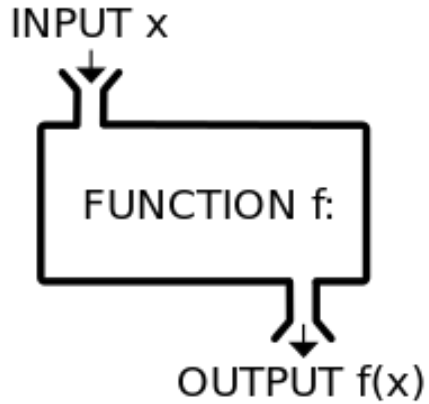
Essay 1

What is a function?

Map input x to a unique output

An "algorithm" or "routine"

Vocabulary: *argument*, *definition*



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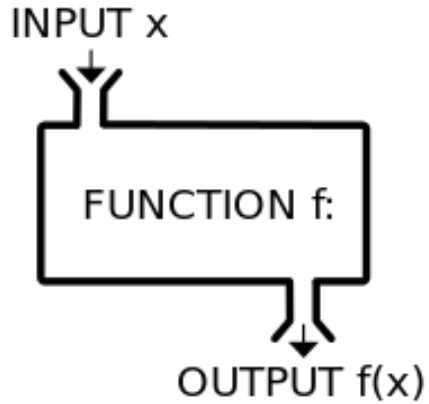

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If $x = 7$, then $f(x) =$

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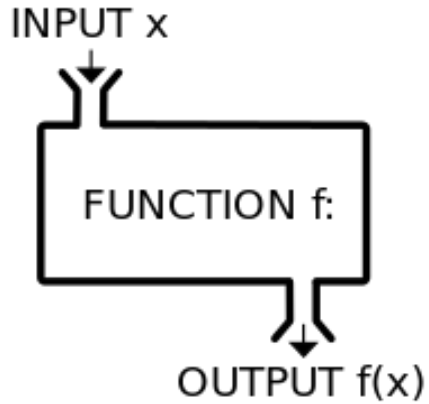

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If $x = 7$, then $f(x) = 17$

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f_x <- 3 + (2 * x)
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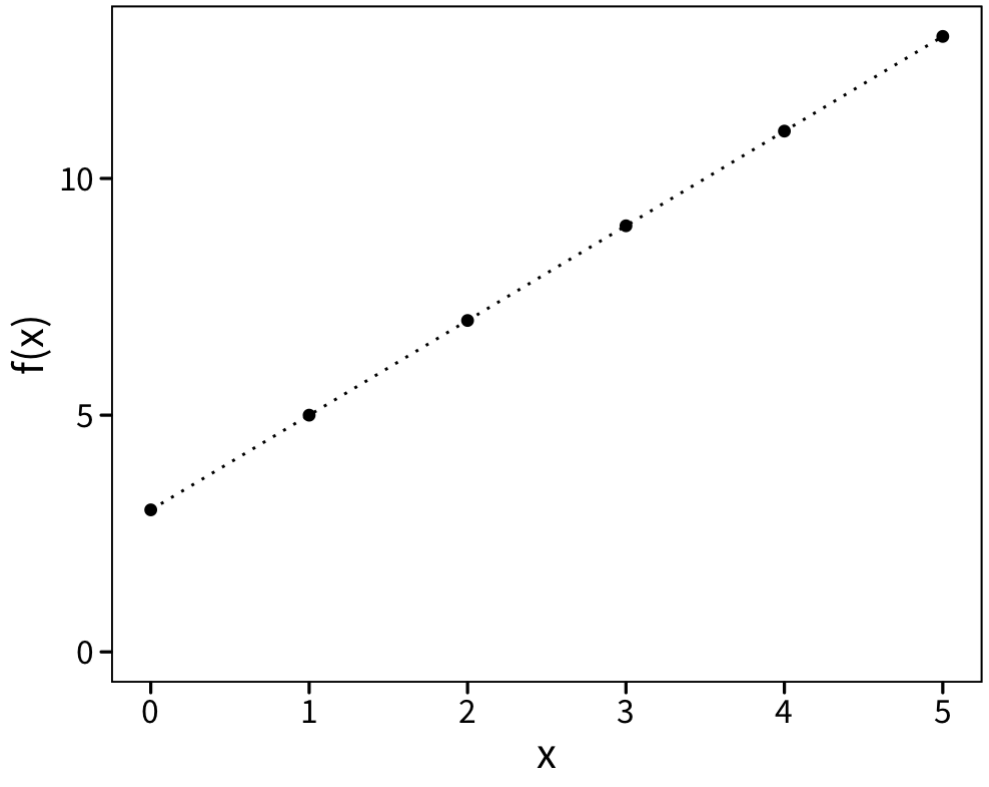

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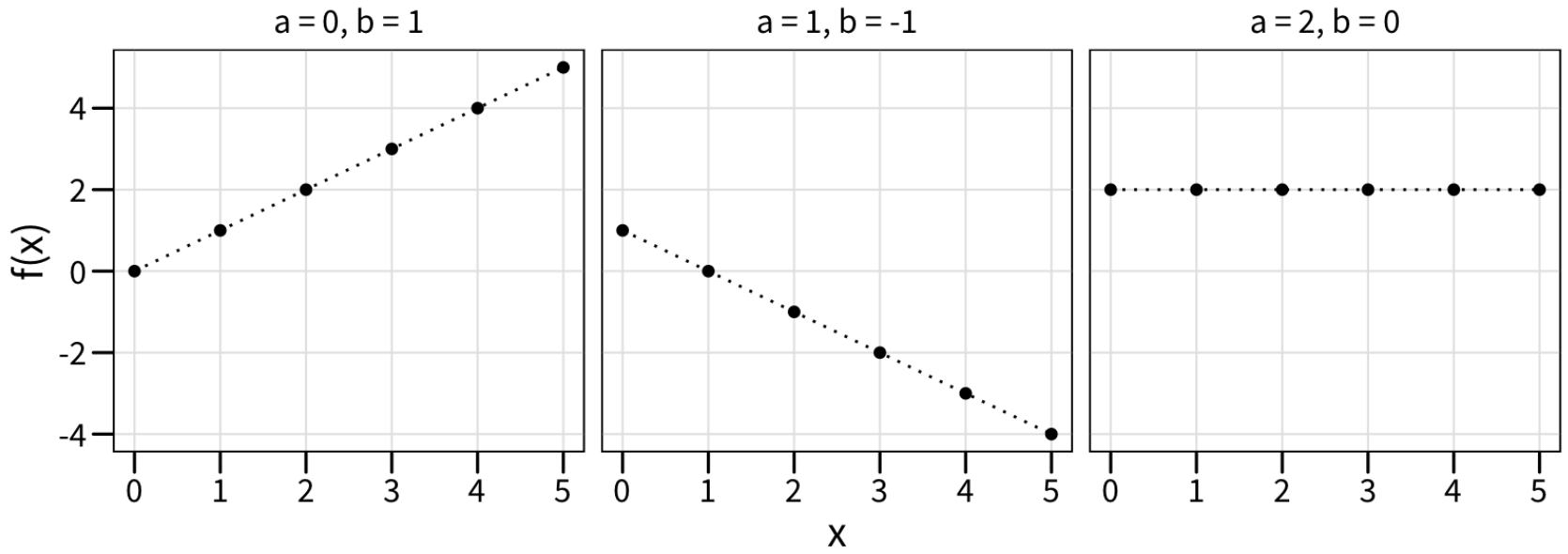

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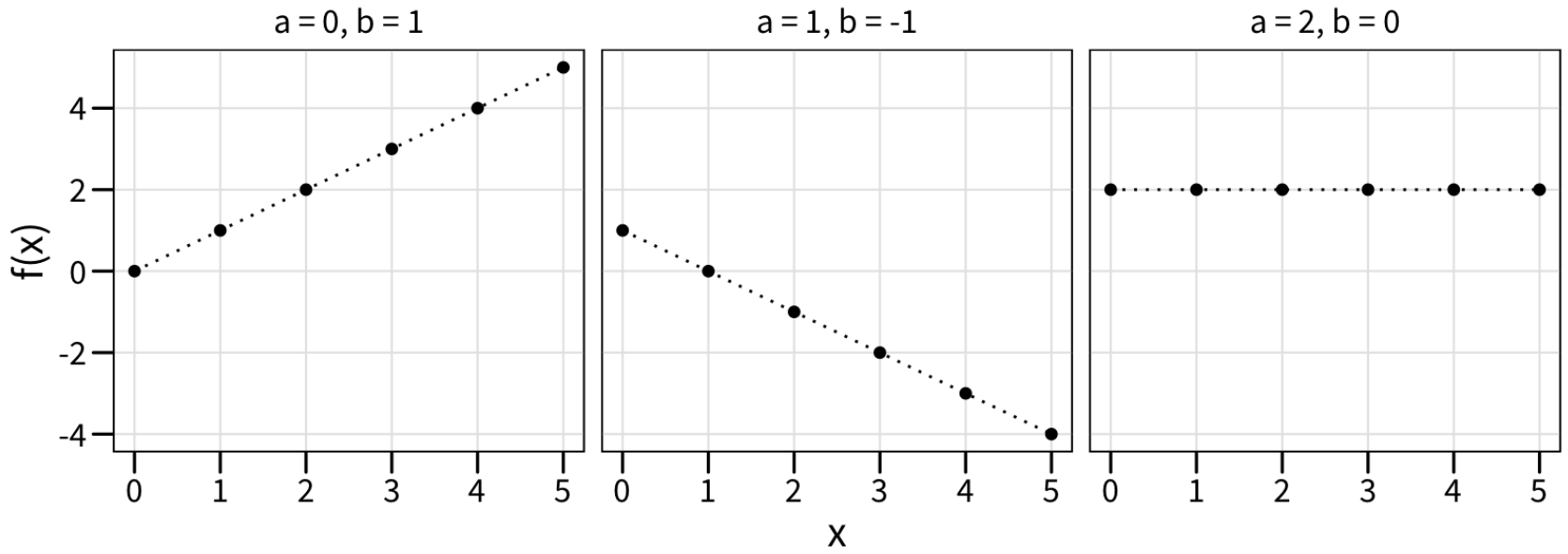

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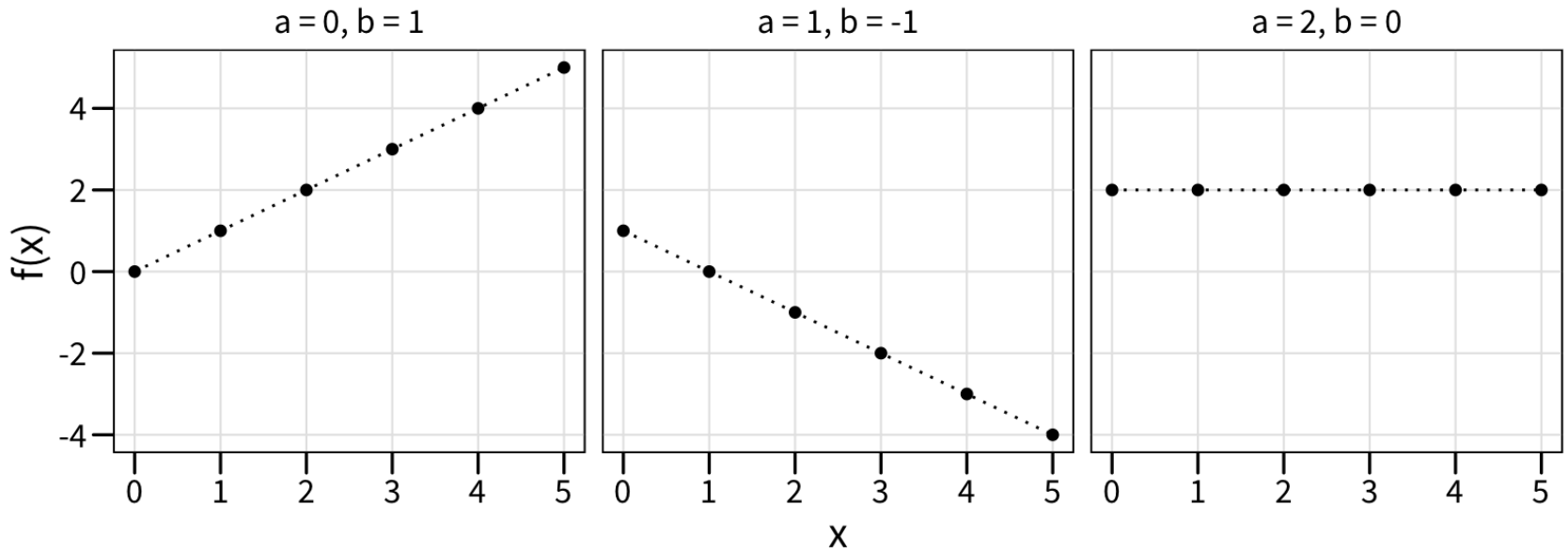

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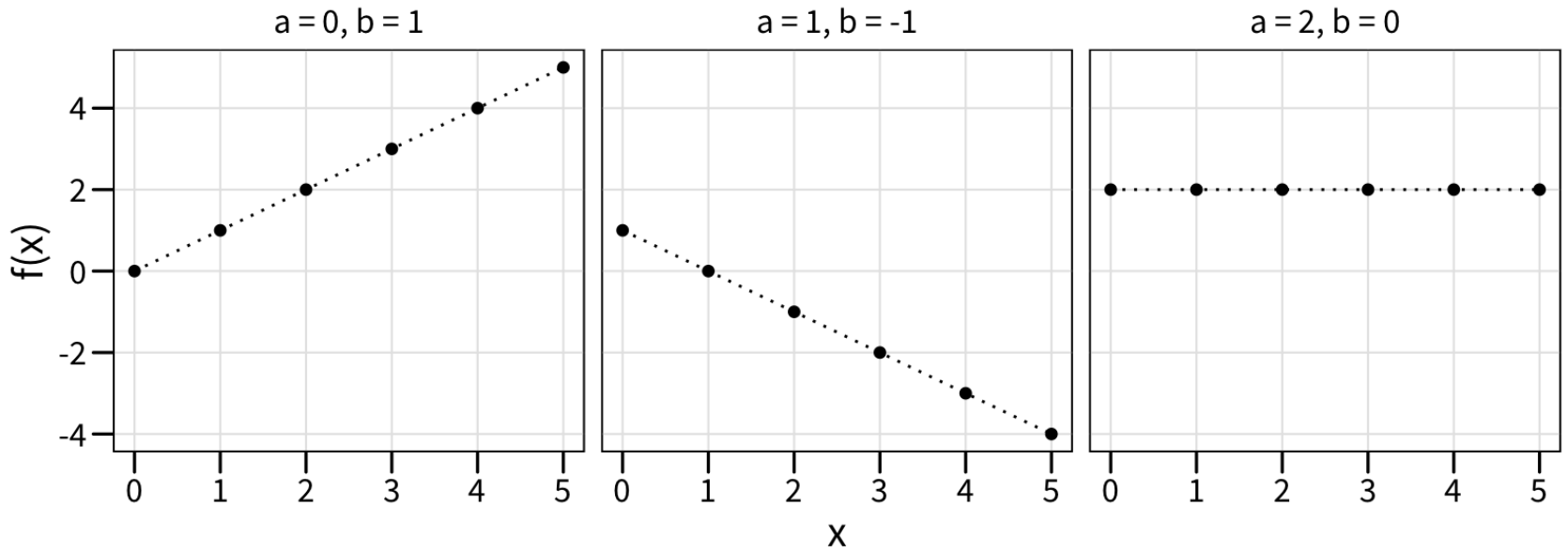

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If $z = [1, 2, 3, \ldots, 100]$, then $m(z) = \ldots 50.5$

Science again

The scientific method (ideally)

Have a question

Consult scientific theory

State hypothesis

Collect & analyze data

Evaluate hypotheses & implications for theory

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Example: Socioeconomic status and voter turnout

Research Question

How does X affect Y?

Dependent variable

Independent variable

Theory

Colloquial and scientific meanings

Theory

Colloquial and scientific meanings

Theory is *falsifiable*

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Colloquial and scientific meanings

Theory is *falsifiable*

Theory is *parsimonious* and *general*

> *Abstraction means throwing away detail, getting rid of particulars. We begin with a variety of different things or events—objects, people, countries—and by ignoring how they differ, we produce some abstract concept like "furniture," "honor killing," "social-democratic welfare state," or "white privilege."*

Symposium: "What is Good Theorizing?"

AMERICAN SOCIOLOGICAL ASSOCIATION

Sociological Theory
2017, Vol. 35(2) 118–127

DOI: 10.1177/0735275117709046
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SAGE

Fuck Nuance

Kieran Healy[1]

Abstract
Nuance is not a virtue of good sociological theory. Although often demanded and superficially attractive, nuance inhibits the abstraction on which good theory depends. I describe three "nuance traps" common in sociology and show why they should be avoided on grounds of principle, aesthetics, and strategy. The argument is made without prejudice to the substantive heterogeneity of the discipline.

Keywords
theory, nuance, models, fuck

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If [general thing about the world] then [specific thing in my study]

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A good study uses a *discerning* hypothesis

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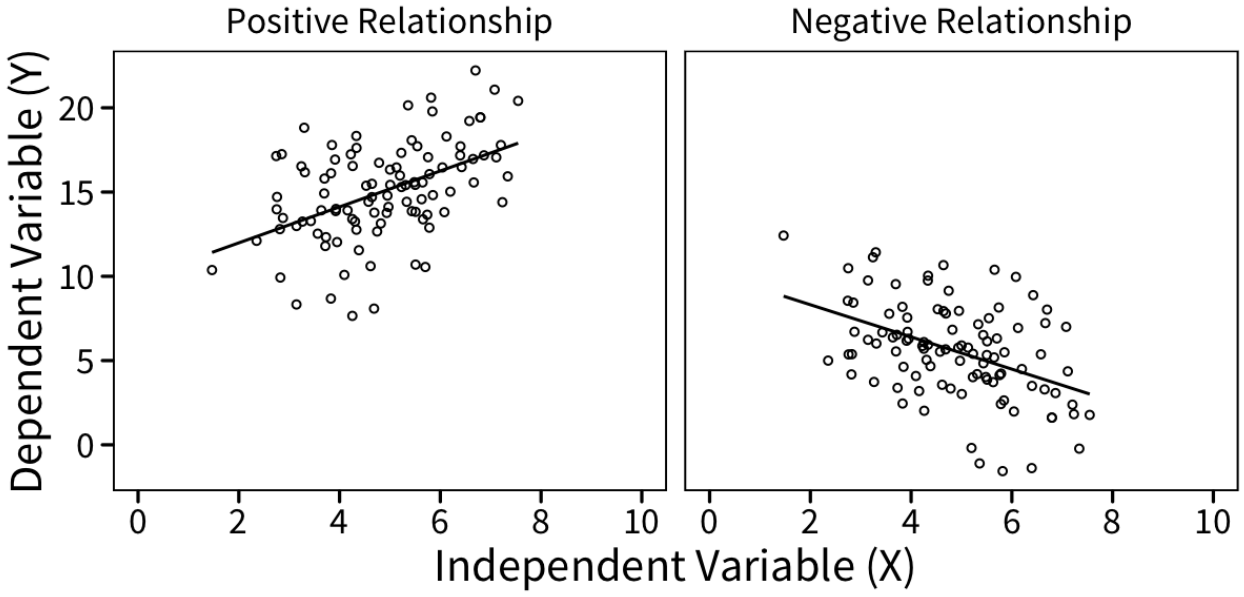
All *falsifiable*

Collecting and analyzing data

Unpacking this all semester

- Measuring important variables
- Measuring associations (positive/negative relationships)
- Isolate the important effect
- Strength of signal (vs noise)



Essay 1

Looking ahead

On Monday:

- Measurement and causality issues in social science
- Assign Essay 1 (due Weds, Feb 6)

On Wednesday:

- Talking about `Data`

In section:

- R basics, user interface, simple functions