CS&SS 569 Visualizing Data and Models

Lab 5: Intro to `tile`

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February 3, 2023

Introduction

- Overview of `tile`

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- Preview of three examples

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  - Scatterplot: HW1 example

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  - ▶ Ropeladder: Crime example
- ▶ Installing `tile` and `simcf`

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- ▶ Walking through examples

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     - Complex traces: `lineplot()`, `scatter()`, `ropeladder()`, and `rugTile()`

Overview of `tile`

- ▶ Primitive trace functions:
  - ▶ `linesTile()`: Plot a set of connected line segments
  - ▶ `pointsTile()`: Plot a set of points
  - ▶ `polygonTile()`: Plot a shaded region
  - ▶ `polylinesTile()`: Plot a set of unconnected line segments
  - ▶ `textTile()`: Plot text labels
- ▶ Complex traces for model or data exploration:
  - ▶ `lineplot()`: Plot lines with confidence intervals, extrapolation warnings
  - ▶ `ropeladder()`: Plot dotplots with confidence intervals, extrapolation warnings, and shaded ranges
  - ▶ `rugTile()`: Plot marginal data rugs to axes of plots
  - ▶ `scatter()`: Plot scatterplots with text and symbol markers, fit lines, and confidence intervals

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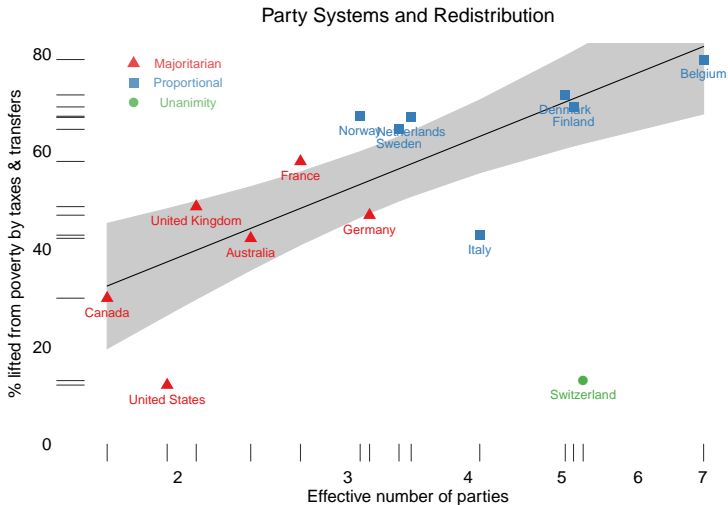
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  3. **Examine output and revise**: Look at the graph made in step 2, and tweak the input parameters for steps 1 and 2 to make a better graph
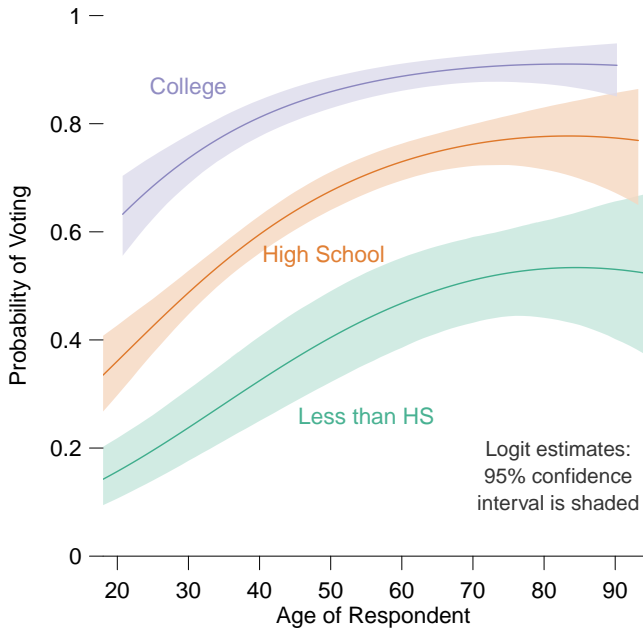
Three examples

- ▶ Scatterplot: HW1 example
- ▶ Expected probabilities and first differences: Voting example
- ▶ Ropeladder: Crime examples (if time permits)

Scatterplot: HW 1 example

Party Systems and Redistribution

Expected probabilities and first differences: Voting example

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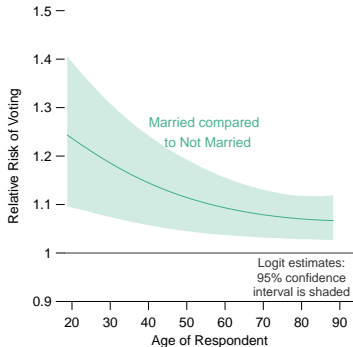   - ▶ `logitsimrr` for relative risks

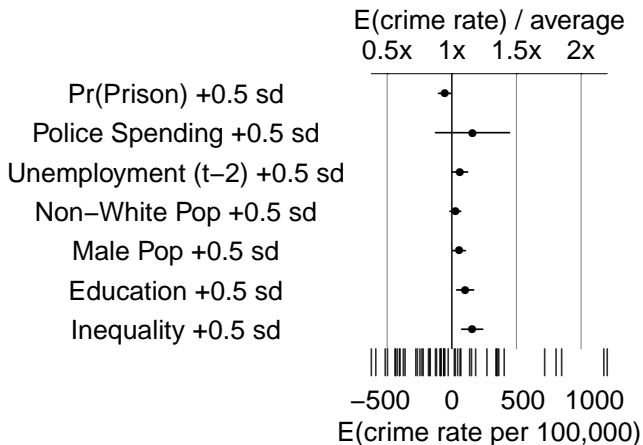# Expected probabilities and first differences: Voting example

Logit estimates:
95% confidence
interval is shaded
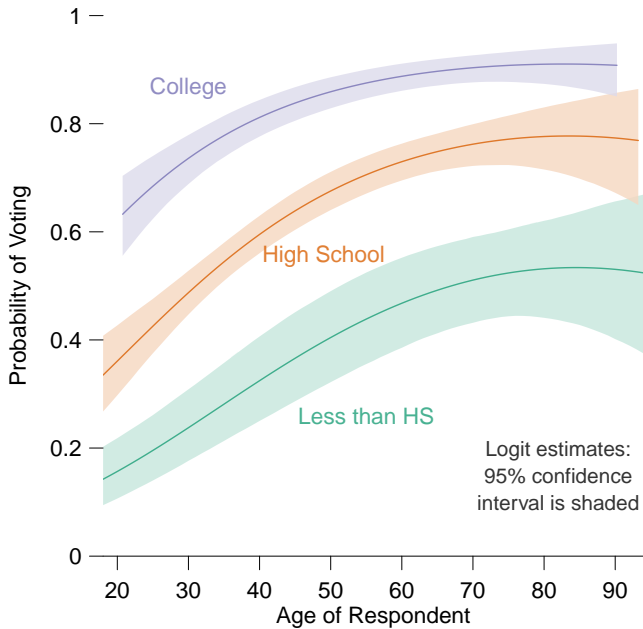
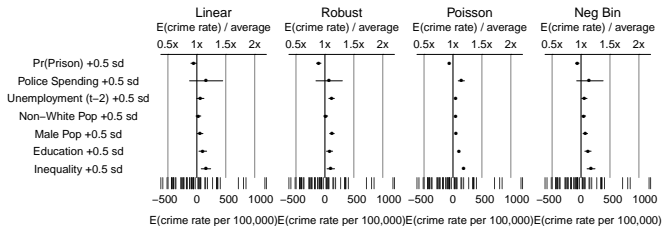# Expected probabilities and first differences: Voting example

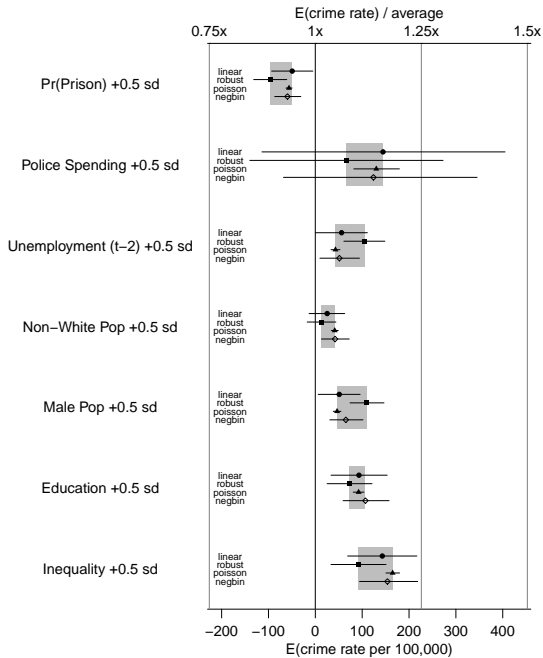# Expected probabilities and first differences: Voting example
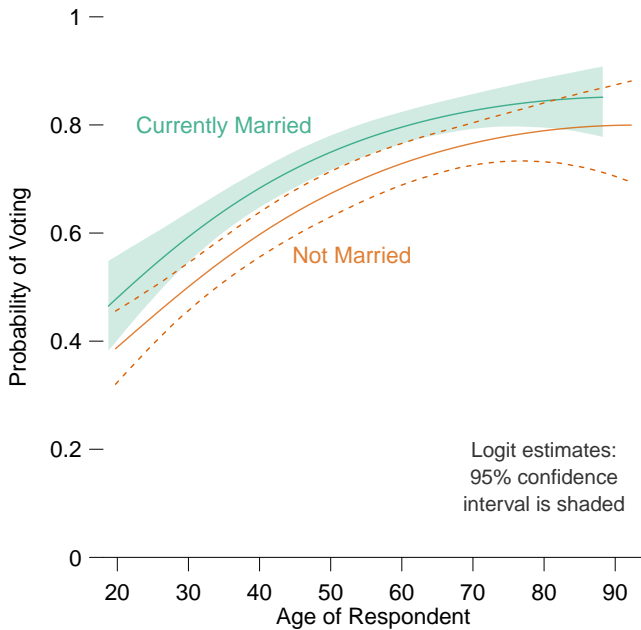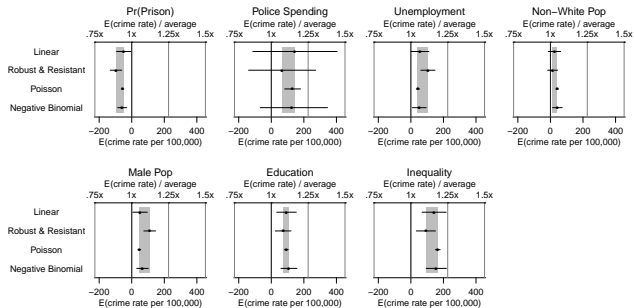
Ropeladder: Crime example (if time permits)

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E(crime rate) / average

| | 0.75x | 1x | 1.25x | 1.5x |

Pr(Prison) +0.5 sd
  linear
  robust
  poisson
  negbin

Police Spending +0.5 sd
  linear
  robust
  poisson
  negbin

Unemployment (t−2) +0.5 sd
  linear
  robust
  poisson
  negbin

Non−White Pop +0.5 sd
  linear
  robust
  poisson
  negbin

Male Pop +0.5 sd
  linear
  robust
  poisson
  negbin

Education +0.5 sd
  linear
  robust
  poisson
  negbin

Inequality +0.5 sd
  linear
  robust
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  negbin

−200   −100   0   100   200   300   400

E(crime rate per 100,000)

Ropeladder: Crime example (if time permits)

Installing `tile` and `simcf`

- Go to Chris's website, Software section

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- ▶ Also download all `R` scripts and data under today's Lab section