“Facts are stubborn things, but statistics are pliable.” —Mark Twain
By the end of section today, you should:

- Understand key concepts from lecture:
  - Confounds (review)
  - Experiments (what they are, why they’re useful, limitations)

- Know where to find resources to help you understand threats to internal validity (history, maturation, testing, instrumentation, instability, regression)

- Be able to explain the experimental design and key results of the Merolla et al. (2013) reading

- Install Stata
Warm Up

“Teens who spend less time in front of screens are happier — up to a point, new research shows”  *Washington Post*, January 22, 2018
Experiments Recap

- Experiments allow us to establish a causal relationship between our independent and dependent variables.
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- Why?
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- Why? Random Assignment!

Eliminates confounds (usually in the form of "selection bias" – think of the hospital example)

Holds everything constant except the independent variable (treatment)

The only 2 things that can influence the differences in your DV are (1) your IV or (2) random chance
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- Why? Random Assignment!
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  - Holds everything constant **except** the independent variable (treatment)
  - The only 2 things that can influence the differences in your DV are (1) your IV or (2) random chance
Recall the screen time and teen happiness example.
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How would you design an experiment to test the following hypothesis? The more time teens spend in front of screens, the less happy they will be.
Experiments Practice 2: Merolla et al. (2013)

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The Basics

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- **What is the hypothesis? Why?** Framing should affect political opinions because terms carry emotional affect and stereotypes, which can mold impressions and sway public opinion.
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- **What is the Independent Variable?**
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- **What is the Dependent Variable?** Political opinions about immigration policy

- **What is the Independent Variable?** Framing, word choice (e.g. illegal, undocumented, or unauthorized)
The Experiment

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- What are the treatments? (Independent Variable)
  - Description of Immigrants: Illegal, Undocumented, or Unauthorized
  - Description of Policy: see next slide
“If we seal our borders and enforce existing immigration laws, [illegal/undocumented/unauthorized] immigrants should be given [the opportunity to eventually become legal citizens / amnesty].”
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“[Illegal, undocumented, unauthorized] immigrants [none / who came to the US as children] should be able to earn legal status if they graduated from a US high school, have stayed out of trouble, and have enrolled in college or the military.”
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“According to [current law / the Constitution] any child born in the US is a citizen of the US. The [current law / Constitution] should be changed so that babies born to [illegal / undocumented / unauthorized] immigrants living in the US do not automatically become US citizens.”
Figure 1
Mean support for immigration policies by experimental condition, illegal, undocumented, and unauthorized
Figure 2
Mean support for immigration policies by experimental condition, varying content of policy description

**LEGALIZATION**
-0.70  Amnesty
-0.04  Opportunity

**DREAM ACT**
0.07  Control
0.41  Came as children

**BIRTHRIGHT CITIZENSHIP**
-0.40  Current law
-0.16  Constitution
A few notes

- Just because an experiment is published does not mean it is perfect! There are still ways that this study could be improved!
- I encourage you to read the articles assigned in this class carefully, thinking about the research design.
- See the reading guide(s) posted on my website for more assistance with this article and suggestions for reading additional articles.
When We Can’t Do an Experiment: Quasi-Experiments!

Our best efforts to show a causal relationship, without random assignment want to try to overcome threats to internal validity.

History
Maturation
Testing
Instrumentation
Instability
Regression

We don’t have time to dig into these today, but please see the worksheet on this posted on my website for practice, definitions, and examples.
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