Political Science Scope and Methods

Observation, Measurement, and Political Implications

Onto the Nuts and Bolts…

- This week: Measurement (part 1)
- Important Concepts
  - Operationalization
  - Reliability and Validity
  - Unbiasness and Efficiency
- Putnam Example (and Jackman critique)

Measurement: An Introduction

- Steps in Measurement
  - Operational definition
  - Agreement?
  - Levels of measurement
    - Nominal
    - Ordinal
    - Interval

Reliability and Validity

- **Reliability**: Extent to which measurement procedure yields same result on repeated trials
  - Example: 2000 Presidential election
    - Test/Retest
    - Inter-coder reliability
- **Validity**: How well the measure we use correspondents to the underlying concept

Reliability and Validity

- **Validity**: How well the measure we use correspondents to the underlying concept
  - Face validity
  - Construct validity
  - Multiple measures – inter-item association

Validity Example: Risk Taking

- **Need a measure of risk-taking proclivities**
  - Use Gambling acts
- **Validity**:
  - Inter-item association
  - Construct validity

Gambling Items

1. Many people take chances in some areas of life...games they play, ways they make money, things like that. Which of the following activities do you take part in – even if you only do it once in a while?

A. Taking part in football pools
B. Check pools
C. Playing bingo
D. Playing poker
E. Betting on the horses
F. Playing bid whist
G. Shooting dice
H. Buying lottery tickets
I. Speculating on land
J. Playing bridge
K. Playing the numbers
L. Entering magazine contests
M. Playing roulette
N. Playing pinochle
O. Baseball pools
P. Buying sweepstakes tickets
Q. Buying raffle tickets
R. Buying stocks
S. Are there any other games you play for money?

2. How much do you usually spend [on the gambling activity] (note: coded zero for non-gamblers)

3. Suppose you were betting on horses and were a big winner in the third or fourth race. Would you be more likely to continue playing or take your winnings? (note: asked of all respondents)

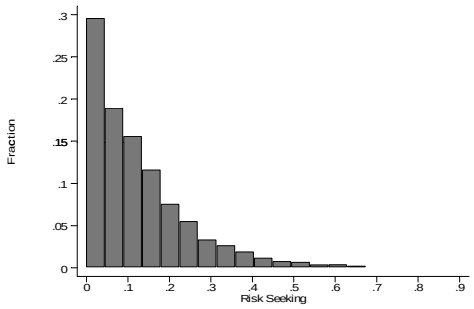
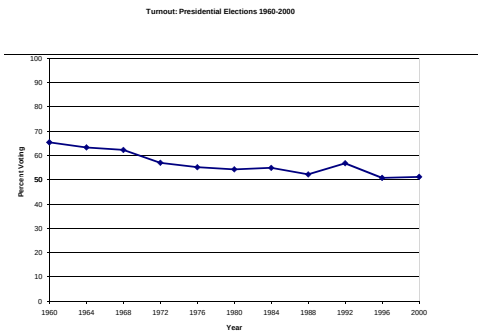


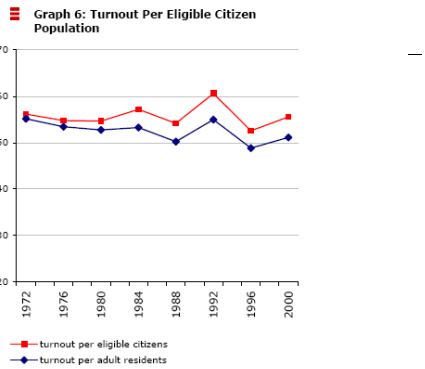
Table 2: Life Changes
Make Changes in Life?

	Coefficient (S.E.)
Constant	-0.77 (0.23)**
Risk Scale	1.16 (0.24)**
Male	0.33 (0.06)**
White	-0.09 (0.10)
Education	**0.66 (0.12)****
Age	1.24 (1.03)
Age^2	-2.60 (1.12)**
Income	-0.18 (0.14)
N	2104
Log-Likelihood	-1249.32

Unbiasness and Efficiency

- **Unbiased** Measure: estimate centered on the truth
- **Efficient** Measure: reducing the bourfd of uncertainty around a point estimate as much as possible

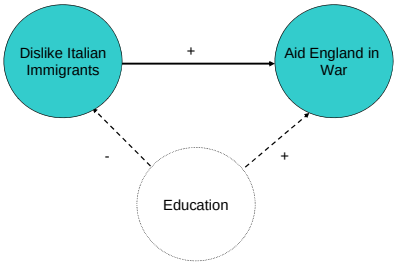




Threats to Unbiasness and Efficiency

- Measurement error
  - Non-random error
  - Random error
    - **In DV: increases uncertainty**
    - In IV: attenuates estimate of effect (but careful!)
- Omitted Variable Bias
  - If your IV of interested is correlated with another IV that is also correlated with your DV ⇒ **Bias**

Omitted Variable Bias: WWII Example



Taking it too far…

- Can't control for *every* omitted variable
- Control for important plausible alternative hypotheses
- Tradeoff with efficiency
- Bottom line: data is precious, use it wisely

Putnam Example

- 12 Indicators in 3 areas
  - Policy process
  - Policy pronouncements
  - Policy implantation
- Is Putnam the model?
  - Validity?
  - Reliability?
- Jackman critique

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