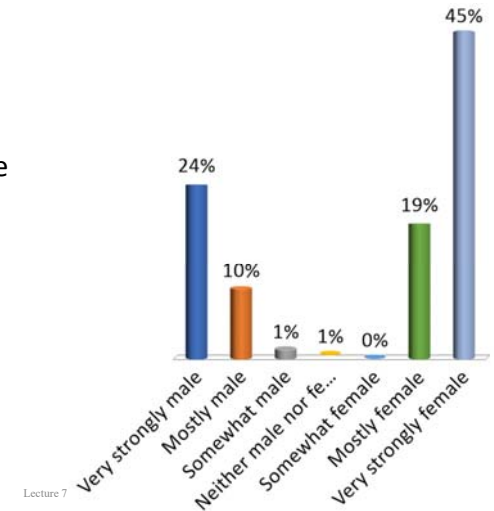


Political Science Research Methods

Lecture 7: Research Design II

Today's team assignment asks you about your gender identity: I feel...(choose one)

1. Very strongly male
2. Mostly male
3. Somewhat male
4. Neither male nor female
5. Somewhat female
6. Mostly female
7. Very strongly female



Reminder



Assignment #2 this Sunday (Sep 29, 11.59pm—no late assignments)



Other questions?

Plan today

How to best approach observational studies: learning the basics of research designs

Variety and examples of experimental designs

Using some experimental logic even for observational studies

Do interactive civic courses increase political knowledge?

Does membership in a voluntary group help to build generalized trust in society through increasing the trust of those who are members.

Research Methods

Lecture 7

Notation of quasi-experimental design

Quasi-experimental research involves the manipulation of an independent variable without the random assignment of participants to conditions (treatment versus control)



X's stands for the intervention or manipulation or simply the IV.



O's stand for the observations or the observation of the dependent variable.

Research Methods

Lecture 7

Type of Design	Examples
Post Test X O	No Comparison Class with civics course → pol knowledge

Example Observation:
Association members are high trusters.

Simple Post-Test

Lecture 7

Research Methods

Type of Design	Examples
Post Test X O	No Comparison Class with civics course → pol knowledge
Post test with Control Group X O O	Compare two types of cases/groups of people: Compare association members with non-members on trust levels

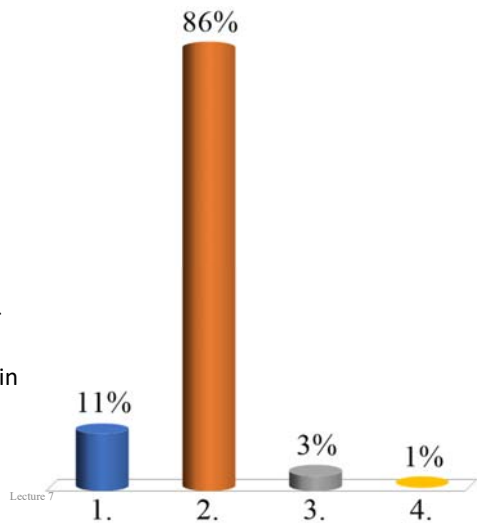
Post-Test with Control Group

Lecture 7

Research Methods

How would a **post-test design with a control** group look like for our question on the effects of civics courses?

- 1. We would compare the political knowledge measures before and after the civics course.
- 2. We would compare the class with the interactive civics course to a class without the interactive civics course.
- 3. We would compare the class with the interactive civics course in one school to another class with an interactive civics course in another school.
- 4. There is no control group possible in this design.



Research Methods

Type of Design	Examples
Post Test X O	No Comparison Class with civics course→pol knowledge
Post test with Control Group X O O	Compare two types of cases/groups of people: Class with civics course→pol knowledge Class without civics course→pol knowledge

Beware of matching treatment and control groups!

Lecture 7

Research Methods

Type of Design	Examples
Post Test X O	No Comparison Class with civics course→pol knowledge
Post test with Control Group X O O	Compare two types of cases: Class with civics course→pol knowledge Class without civics course→pol knowledge
Pre and Post-Test O1 X O2	Compare a case to itself Pol knowledge→civics course→political knowledge Turnout→electoral reform→turnout

Type of Design	Examples
Post Test X O	No Comparison Class with civics course→pol knowledge
Post test with Control Group X O O	Compare two types of cases: Class with civics course→pol knowledge Class without civics course→pol knowledge
Pre and Post-Test O1 X O2	Compare a case to itself Pol knowledge→civics course→political knowledge Turnout→electoral reform→turnout
Pre- and Post Test with Control O1 X O2 O1 O2	Compare two types of cases pre and post Pol knowledge→civics course→pol knowledge Pol knowledge→no civics course→pol knowledge

Other examples: Panel Design, Asking people before and after they join an association

Pre and Post-Test Design

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Research Methods

Pre-and Post-Test Design with a Control Group

Lecture 7

Research Methods

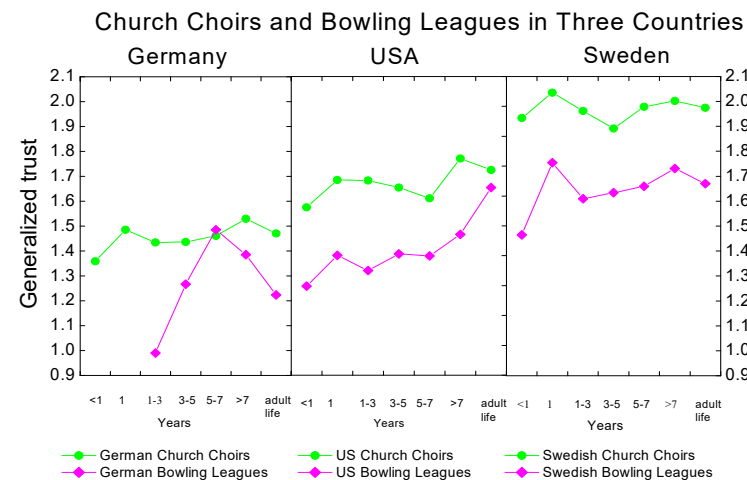
Type of Design	Examples
Post Test X O	No Comparison Class with civics course → pol knowledge
Post test with Control Group X O O	Compare two types of cases: Class with civics course → pol knowledge Class without civics course → pol knowledge Compare association members with non-members
Pre and Post-Test O1 X O2	Compare a case to itself Pol knowledge → civics course → political knowledge Turnout → electoral reform → turnout
Pre- and Post Test with Control O1 X O2 O1 O2	Compare two types of cases pre and post a) Pol knowledge → civics course → political knowledge Pol knowledge → no civics course → political knowledge
Dosage Design X0 O X3 O X6 O X9 O X12 O	Compare cases of different 'manipulation' strength Courses with no, 3, 6, 9,... modules → political know. Association members of different lengths of membership

Research Methods

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Using a Quasi-Experimental Design Approach for Observational Studies:

Length of Membership as an Example of Dosage Design



Research Methods

Lecture 7



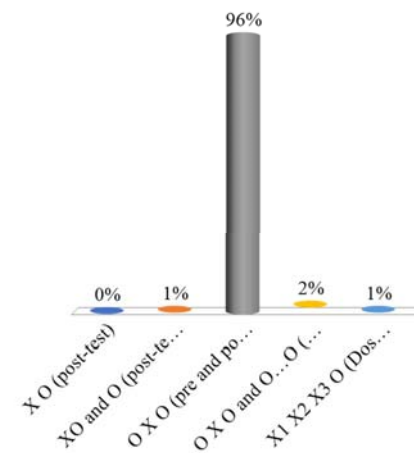
Practicing what we have learned

Research Methods

Lecture 7

There was a regional reform in Italy in the 1980's that gave more budgetary power to the Italian regions. Researchers measured the institutional performance of all regions before the reform and again after the reform in order to understand whether the reform has made institutions more efficient. What kind of research design do we see?

1. X O (post-test)
2. XO and O (post-test with control)
3. O X O (pre and post-test)
4. O X O and O...O (pre and post-test with control)
5. X1 X2 X3 O (Dosage design)

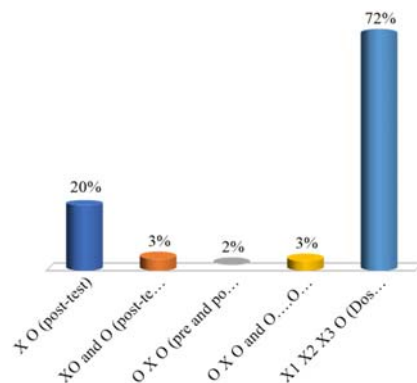


Research Methods

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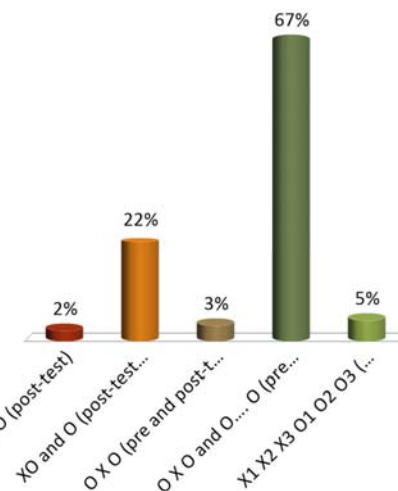
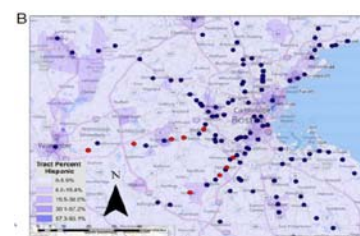
In a study of Indian regions, researchers wanted to determine whether different levels of human resources were causing differences in foreign direct investment (FDI). They measured both human resources on a scale across the regions and FDI (also by region) in 2004. The study found a positive correlation between the two variables. Which research design was likely being used?

1. X O (post-test)
2. XO and O (post-test with control)
3. O X O (pre and post-test)
4. O X O and O....O (pre and post-test with control)
5. X1 X2 X3 O (Dosage design)



What kind of experiment was used in Ryan Enos' work on migrant workers in trains?

1. X O (post-test)
2. XO and O (post-test with control)
3. O X O (pre and post-test)
4. O X O and O....O (pre and post-test with control)
5. X1 X2 X3 O1 O2 O3 (Dosage design)



Key Point

- Use experimental *logic* also for observational studies (nearly identical control group; time order, etc.)

Some Steps for Testing Causality

First, Showing a correlation

Excluding other factors

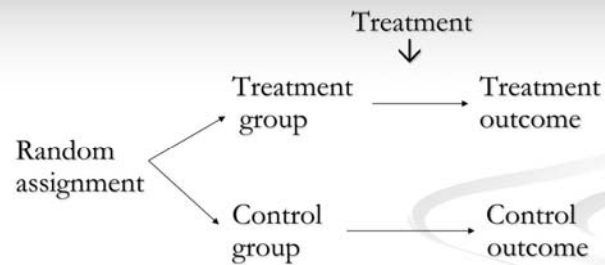
Temporal order

Control group (if possible)

OR: Randomization of assignment or equivalent (matched control group—if possible)

Need causal mechanism.

A Standard Experimental Design



The difference between the treatment and control outcomes is the *treatment effect*.

However, not all experiments are created equal....

How would you best characterize the essence of *natural* experiments in one word



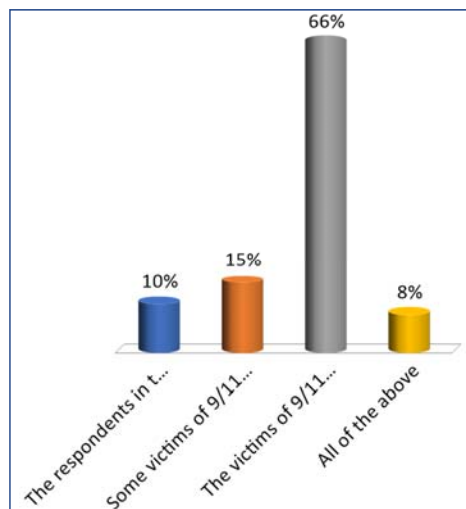
The Nature of Natural Experiments

	True Experiment	Natural Experiment
Randomization	Yes	As-if randomization
Groups	Treatment and Control Group	Treatment and Control Group
Researcher has Control over treatment	Yes	No

- Observing an “experiment” run by nature.

What was the "as-if randomization" in the study by Eitan Hersh (Sept 11)?

1. The respondents in the study were nearly randomly sampled
2. Some victims of 9/11 had family members and others did not, which was distributed nearly randomly across participants in the study
3. The victims of 9/11 were hit in a nearly random way
4. All of the above

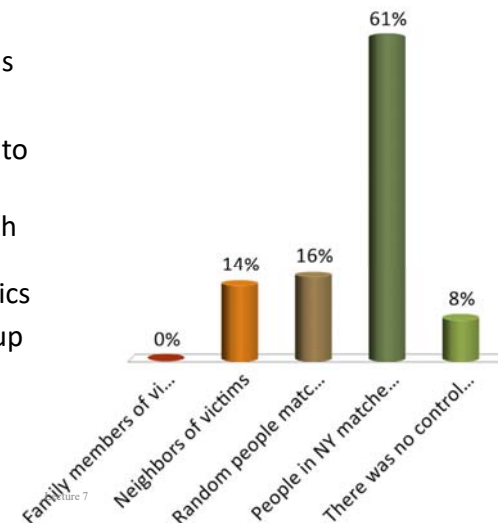


Research Methods

Lecture 7

What was the control group in Eitan Hersh's study?

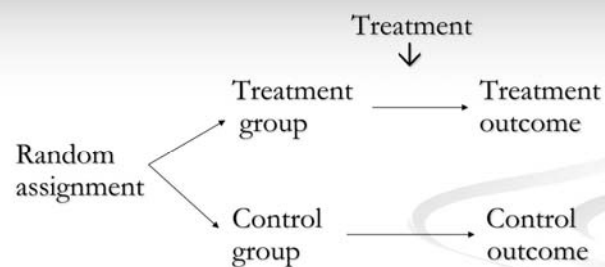
1. Family members of victims
2. Neighbors of victims
3. Random people matched to victims' families
4. People in NY matched with victim on many socio-demographic characteristics
5. There was no control group



Research Methods

Lecture 7

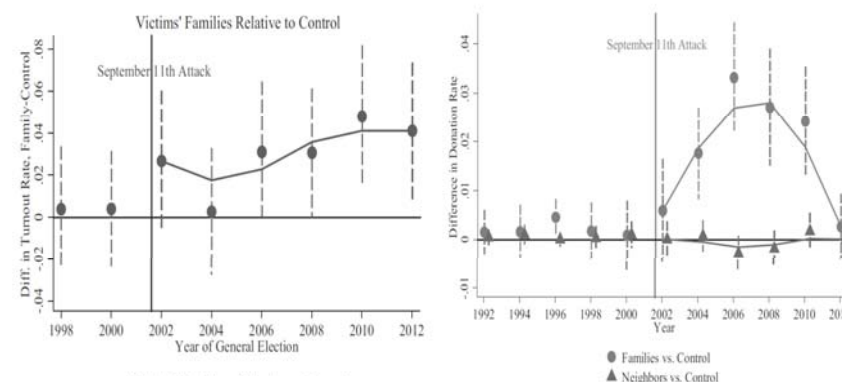
A Standard Experimental Design



The difference between the treatment and control outcomes is the *treatment effect*.

Research Methods

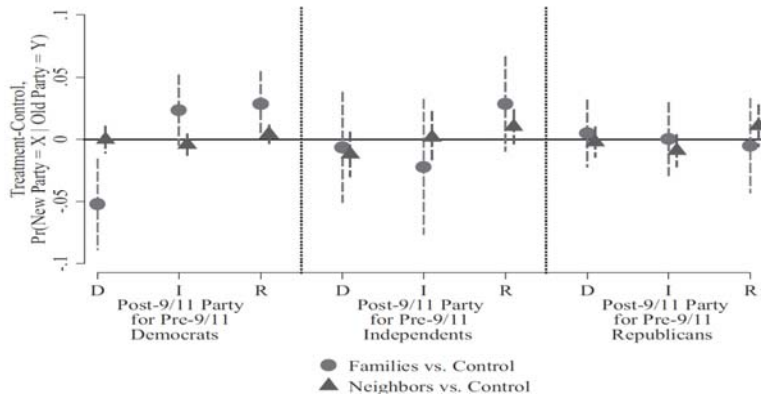
Lecture 7



Eitan Hersh: September 11 Effects on Turnout and Donation

Research Methods

Lecture 7



Eitan Hersh: Sept 11 Effects on Party Registration

Research Methods

Lecture 7

Special Features of
the Hersh Study
that ensure
causality flow

- Subjective data=surveys and self-reports, versus documented data
- As if randomization through 9/11 victimhood (similar to lottery)
- Uses pre and post-data
- Creation of a control group that is VERY similar (geographic linkage to victims and full matching)

Research Methods

Lecture 7

Thursday



Cont.
experiments/measurements



Read chapter 5 textbook



Assignment #2 until Sunday

Lecture 7

Research Methods

Team Scores

Points	Team	Points	Team
4.67	Mostly female		
4.53	Mostly male		
4.49	Very strongly male		
4.48	Very strongly female		
3.5	Somewhat male		
1	Neither male nor female		
0	Somewhat female		