

Introduction to Field Experiments

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Background: Three types of studies

- Descriptive: describe what exists
 - How many people support new mining laws?
- Relational: describe relationship between two variables
 - How does support for new mining laws differ among men and women?
- Causal: determine if one variable affects another variable
 - Do information campaigns affect support for new mining laws?

Background: Three types of studies

- Descriptive: describe what exists
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 - Do information campaigns affect support for new mining laws?

Field experiments are the gold standard for causal questions!

What do we need to make a causal claim?

- Strong correlation between the cause (independent variable) and effect (dependent variable)
 - We have to show that our information campaigns are associated with a change in support for new mining laws
- Temporal precedence: our cause should precede our effect
 - Our information campaigns should have happened before the levels of support changed
- No other factor accounts for the change in the levels of support for the new mining laws
 - Other events that might have happened at the same time
 - Only people who already supported the new laws were interested in learning more about them

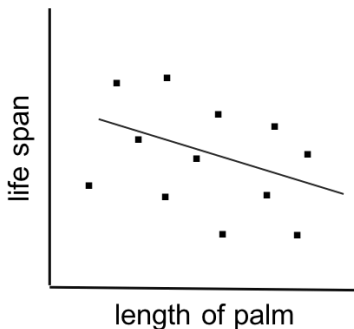
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Why Correlation and Temporal Precedence Aren't Enough: Spurious Correlations

Palm readers are right?

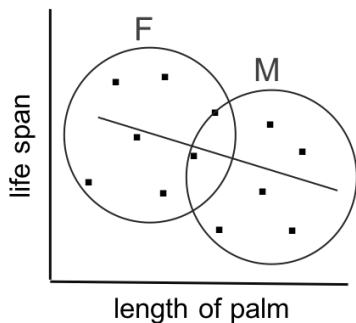
Negative relationship
between length of palm
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Why Correlation and Temporal Precedence Aren't Enough: Spurious Correlations

Give Kids Bigger Shoes?

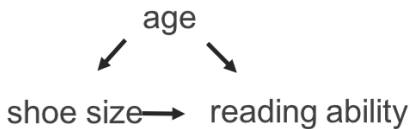
Shoe size predicts reading
ability for elementary
school students

shoe size → reading ability

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Why Correlation and Temporal Precedence Aren't Enough: Spurious Correlations

These are silly examples, but many studies do exactly this! (See, e.g., most medical studies using observational data: “Nightlights cause myopia in children!” “Red wine prevents heart attacks!”)

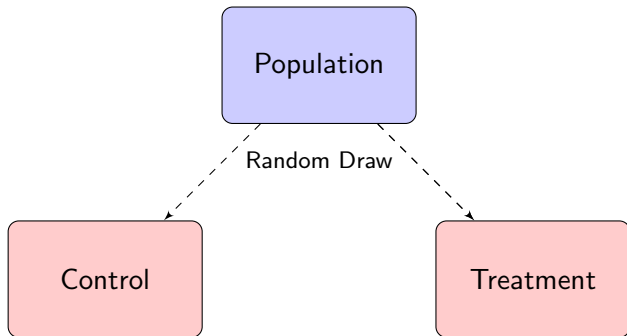
Another common challenge facing research designs for
policy: selection

UBC's Effort to Support Women in Academia

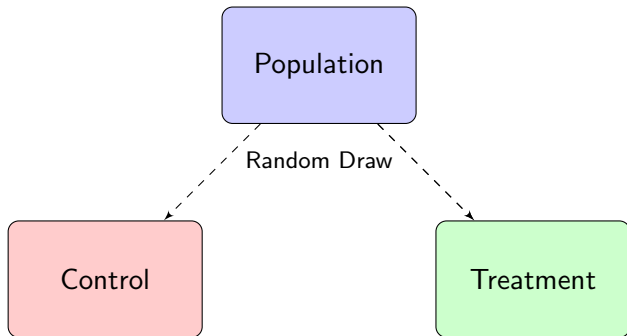
- Interview female department heads about their experiences in academia
- Record all of the challenges and obstacles
- Use this input to design policies

Why might this be ineffective?

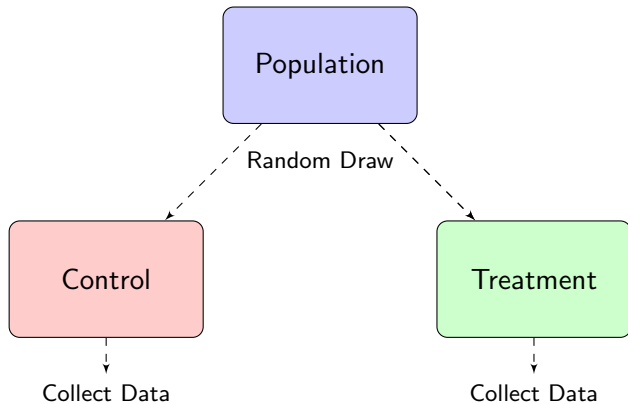
How can we do better?



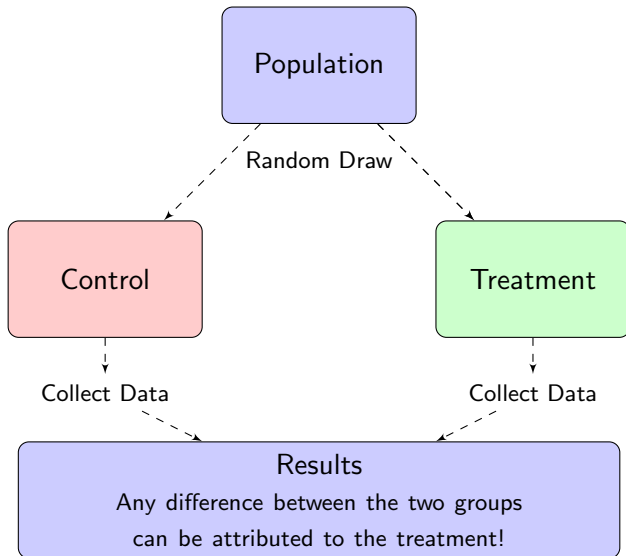
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How can we do better?



The Gold Standard

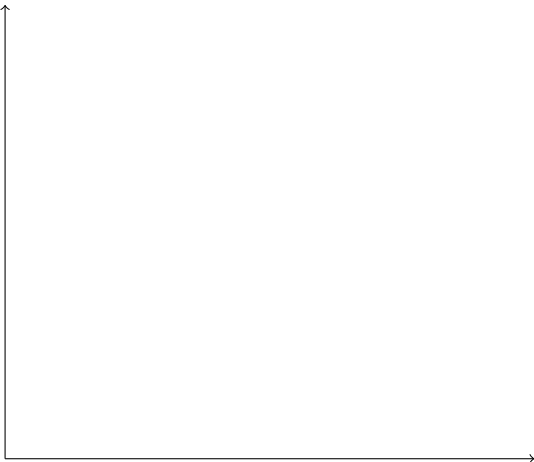
- Rules out a number of concerns associated with observational studies
- Brings together the best of research and policy: real-world interventions
- Interventions can be designed to address issues of inclusion and equity

What to watch out for:

- Unfortunately there are some experiments that address questions
 - ...everyone already knows the answer to
 - ...no one cared enough about to ask in the first place
- Tendency to frame the problem in a way that's amenable to an experiment
- Over-reliance on easily measured indicators or benchmarks
BUT: just because something is easy to assess doesn't mean that it's important!

Should you do an experiment?

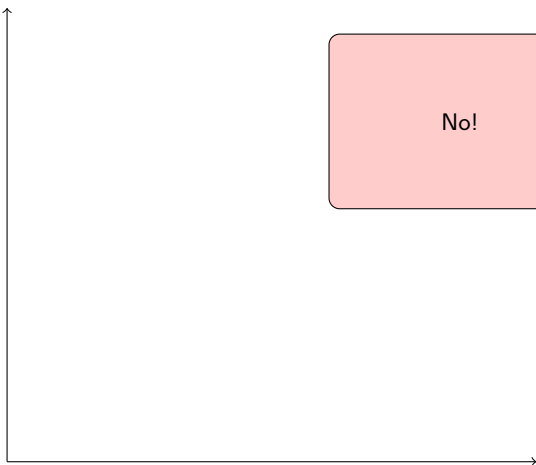
We know it works



We know who needs it

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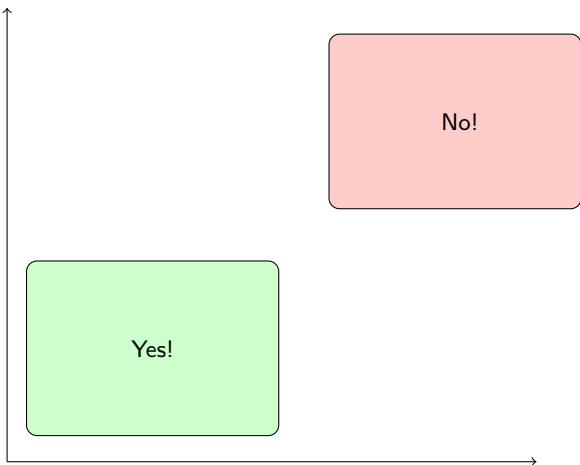
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Should you do an experiment?

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Should you do an experiment?

We know it works

- Randomized Roll out
- Switching Replications

No!

Yes!

We know who needs it

Should you do an experiment?

We know it works

- Randomized Roll out
- Switching Replications

No!

Yes!

- Recruit-and-delay/deny
- Regression Discontinuity

We know who needs it

Key Concerns for the Design of an Experimental Intervention

- Space: what's already been done? Are there overlapping interventions?
- Exacerbating existing gaps between groups. For example:
 - Delivering voting information through schools can increase participation gap between in-school and out-of-school youth
 - Using technology to deliver voting information can increase the participation gap between men and women
- Targeting: to those who need it most? Where the intervention will be most effective? Socioeconomic status?
- Context matters!

Addressing Research Design Challenges

- Consider designs that may be more appropriate/acceptable
 - Roll out intervention in phases / Switching replications design
 - Two-arm treatment
 - Placebo status
 - Switching replications design
- Implementation: good partnerships are crucial, as well as a methodologically-oriented survey team
- Spillover effects: explicitly measure or integrate into the treatment

Interpreting the Results

- There are no “stars” or p-values that will denote policy significance
- Translate to actionable policies
- Think hard about external validity: scope conditions, heterogenous effects, etc.