FLS 6441 - Methods III: Explanation and Causation

Week 11 - Comparative Case Studies & Process Tracing

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Classification of Research Designs

		Independence of Treatment Assignment	**Researcher Controls Treatment Assignment?**
Controlled Experiments	Field Experiments	✓	✓
	Survey and Lab Experiments	✓	✓
Natural Experiments	Natural Experiments	✓	
	Instrumental Variables	✓	
	Discontinuities	✓	
Observational Studies	Difference-in-Differences		
	Controlling for Confounding		
	Matching		
	Comparative Cases and Process Tracing		

Section 1

Comparative Case Studies

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- **Exactly** the same causal inference logic as Large-N
- The Fundamental Problem of Causal Inference
  - We need counterfactuals to estimate treatment effects: **Comparative** Cases

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- Common error: "research that tries to explain the outbreak of war with studies only of wars" (KKV)

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  - **Matching:** More useful

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- **Our Large-N dataset reduced after matching might look reasonably similar to comparative case studies**

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  4. Slow economic growth

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	Variable	Case A	Case B
Outcome	Democracy	?	?
Treatment	Development	Low	High
Controls	Religion	Christian	Christian
	Continent	Europe	Europe
	Inequality	0.45	0.65
	Economic growth	1.2%	2%
	National dish	Pasta	Corn
	Length of Railways	400km	120km

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    - p-values aren't the only source of credibility (Slater and Ziblatt 2013)
  - Statistical Inference: Non-random case-selection, so generalization is harder

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  - Our goal is not to explain why outcome Y happened in one case, but why it happens generally

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  - But:
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    - Randomized sampling is not the same as randomized treatment
  - More reliable to pick equal numbers of treated and control units, ensuring balance on key confounders - **purposive** sampling

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  - But: If we select cases explicitly for a *range* of values of the outcome, that's better

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  - At the same time as balancing confounders - hard!

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  - **Extreme cases:** Highest and lowest values of treatment, eg. Lieberman

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  - **Influential cases:** How sensitive is our relationship to mismeasurement of a key case?

Section 2

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  2. Comparative cases to identify explanation, then **tested for generalizability** in Large-N sample (Lieberman)
  3. Large-N analysis to show **causal effect within-case**, then generalized using comparative case studies (Ziblatt and Slater)

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  - Is the evidence consistent with theory A? Or inconsistent with theory B?

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5. Can we eliminate all other theories except our treatment?
    - Sherlock Holmes' Method of Elimination

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- But we don't have any counterfactual to compare against
- The outcome could instead have been caused by a confounder

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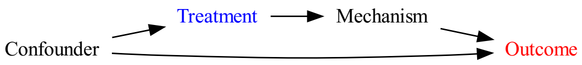
  - Evidence of M NOT occurring is proof Treatment did not have a causal effect
  - Evidence of M occurring is consistent with Treatment having a causal effect



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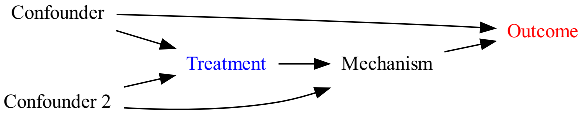

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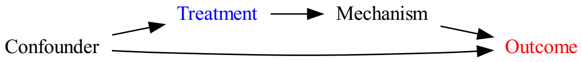
- If there are no other possible confounders consistent with this mechanism, this is a 'Smoking Gun' test



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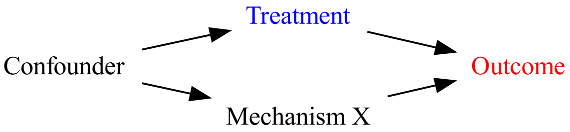
- This is a 'straw in the wind' test



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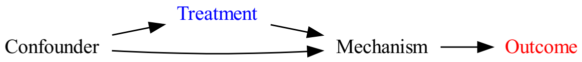

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- **Alternative Theory:** Or was it American pressure?

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Process Tracing

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Process Tracing

- What does the evidence show?

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- We’re substituting **assumptions/theory** for a counterfactual
  - We **’assume’** that the only way our treatment could work is through the mechanism we specify
  - And we assume the only way confounding works is through the mechanism we specify
- So everything depends on how confident we are in our theory/assumptions about mechanisms

Process Tracing

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  - Subjective judgment on the weight of each piece of evidence

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- What are we really learning from process tracing?
- That a treatment caused an outcome **in our specific case**
- But how representative is our case?
- Will the same causal effect occur in other contexts?