

# Case study

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Approach, not method

# Cross-case studies not sufficient

- Incredible amount of models available
- Complicated definition of interaction among variables
- Assumptions over causal mechanism
- Equifinality of causal effects
- Statistical significance is arbitrary ( $p \leq 0.05$ )
- ...

# Case study

- One of the most frequent approaches associated with qualitative research
- Detailed analysis of just one/a few cases – goal to produce holistic assessment of the complexity of the case
- Cases  $\neq$  observations
- Causal vs. non-causal (?)
- Qualitative vs. quantitative (?)
- Deduction vs. induction

# Case study paradox

- Frequently used and well-established
- But!
- Avoiding a proper statement of method
- No specific and comprehensive “case-study methodology” in place

What is a case?

# Case

- **Bounded** empirical phenomenon
- Instance of wider **population** of similar phenomena
- **Spatially delimited** phenomenon observed at a **single point in time/over a time period**
- Comprises the type of phenomenon that an inference attempts to explain
- Case vs. observation
- What is the phenomenon a case of?
- Nation state

What is a population?



# Defining population

- Important to define scope conditions – delimit the boundaries of the domain/population
  - Scope conditions affect the outcome
  - Validity of inference beyond scope conditions is not necessarily relevant
- Scope conditions need to be conceptualized
- Spatial boundaries
- Temporal boundaries
  
- Nation state

How many cases?

# Number of cases in designs

		Temporal variation	
		Absent	Present
		Spatial variation	
		Absent	Present
One case	Absent		Single-case (diachronic)
	Within case	Single-case (synchronic)	Single-case (synch. & diach.)
Few cases	Within and across cases	Comparative method (synchronic)	Comparative-historical (synch. & diach.)
Many cases	Across cases	Cross-sectional	Time series cross-sectional
	Within and across cases	Hierarchical	Hierarchical time series

# Research questions - example

- What explains welfare state development within the OECD?
- What explains welfare state development within the OECD after Cold War?
- What explains variation in U.S. welfare spending over time?
- What explains variation in U.S. welfare spending across states?
- What explains the relatively weak American welfare state?

How many observations?

# Number of observations

- Number of observations (question of  $N$ ) distinguishes (?) case study from cross-case analysis
- Large  $N$ 
  - Can't be handled in qualitative manner
  - Present in cross-case studies
  - Implies number of variables that may be tested (lin. regression?)
- “Small”  $N$ 
  - Allows for both quantitative and qualitative research
  - Allows to gain insight
  - Don't have to be very small in fact

# Cross-case study

		Observation	Variable						
			X1	X2	X3	X4	X5	Y	
Population	Sample	Case 1	Obs. 1						
		Case 2	Obs. 2						
		Case 3	Obs. 3						
		Case 4	Obs. 4						
		Case 5	Obs. 5						
		Case 6	Obs. 6						
		Case 7	Obs. 7						
		Case 8	Obs. 8						

# Case study

			Observation	Variable					
				X1	X2	X3	X4	X5	Y
Population	Sample	Case 1	Obs. 1.1						
			Obs. 1.2						
			Obs. 1.3						
			Obs. 1.4						
		Case 2	Obs. 2.1						
			Obs. 2.2						
			Obs. 2.3						
			Obs. 2.4						



# Cross-case vs. case-study

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Study	Subjects	Cases	Observations	Analysis	Population
The American Voter (Campbell et al., 1960)	Citizens of the United States	<b>1000+</b> (individuals)	1000+	Quant (cross- case)	Americans
The People's Choice (Lazarsfeld 1948)	Citizens of Erie County, OH	<b>600</b> (individuals)	2000	Quant (cross- case)	Americans
Middletown (Lynd and Lynd. 1929/1956)	Citizens of Muncie, IN	<b>1</b> (cities)	300+	Quant & Qual	American cities
Political Ideology (Lane 1962)	Working men of "Eastport"	<b>15</b> (individuals)	15	Qual	American working class

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Research design choices

# Research goals' affinity

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	Case study	Cross-case research
<b>Theory/hypothesis</b>	Generating	Testing
<b>Validity</b>	Internal	External
<b>Causality</b>	Mechanisms	Effects
<b>Argument</b>	Deep	Wide

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# Relation to theory

- Atheoretical (?)
  - Exploratory research, case-specific research
- Building hypothesis/theory
  - Inductive approach – generalizing knowledge about certain class of phenomena
- Modifying hypothesis/theory
  - Sharpening/refining the hypothesis
- Testing hypothesis/theory
  - Deductive approach – “applying” the theory on a case

# Relation to theory

Moment the hypothesis is formed

After empirical  
analysis

Before empirical  
analysis

Existence of theory  
for grounding the  
research

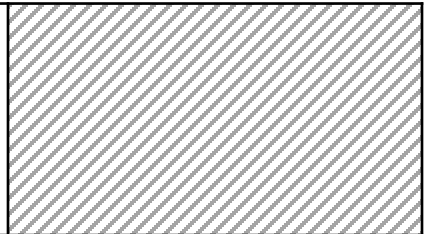
No

Building  
hypothesis

Yes

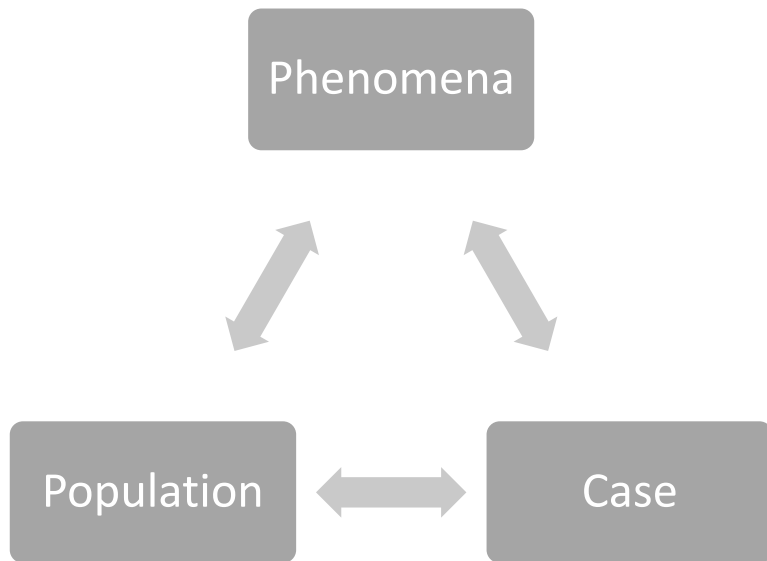
Modifying  
hypothesis

Hypothesis  
testing

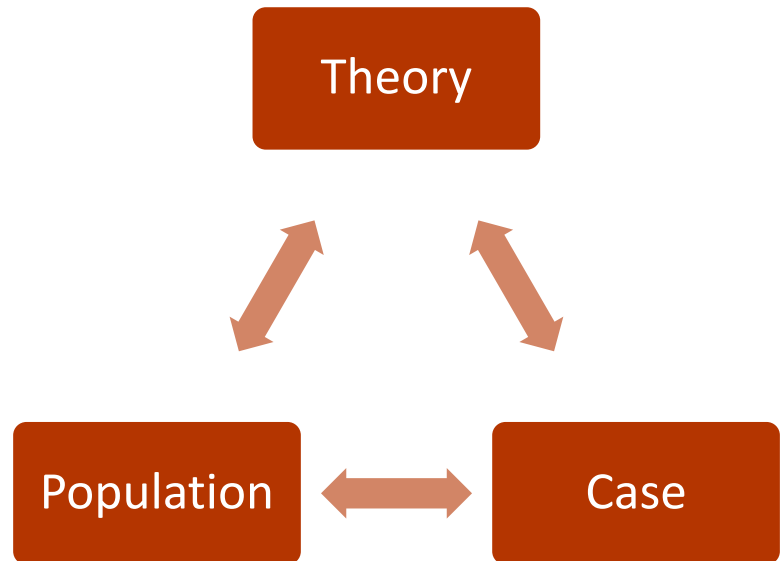


# Theory building vs. testing

Theory building



Theory testing



# Research goals' affinity

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# Research goals' affinity

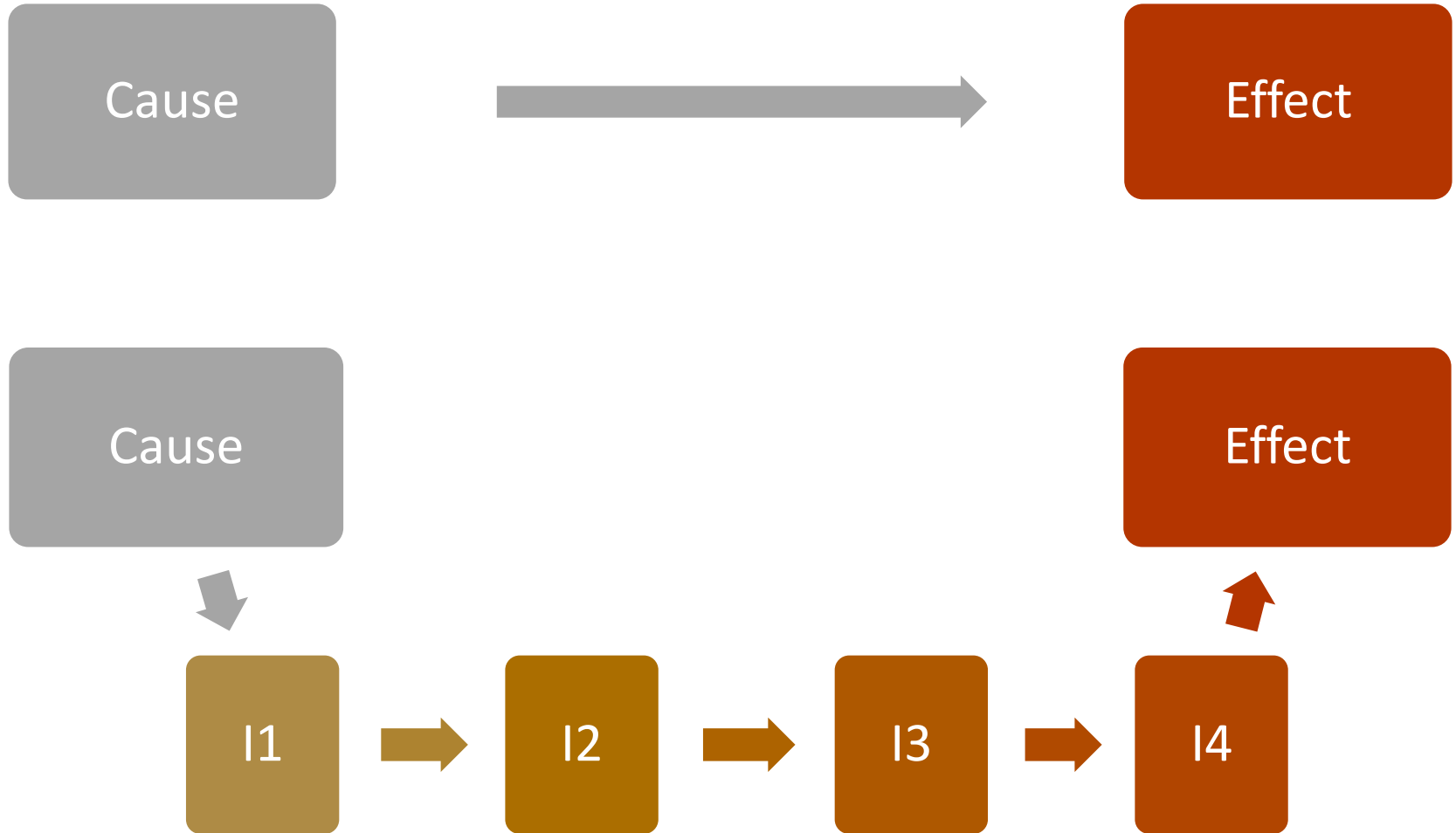
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# Causal effects vs. mechanisms



# Causation

- Covariational
  - Change in X leads to change in Y
  - Correlation logic
  - Symmetric – if positive correlation:
    - The higher the X, higher the Y
    - The lower the X, the lower the Y
  - Two measurements
    - Difference in degree (strength of effect)
    - Difference in kind (qualitatively different score)

# Causation

- Set-theoretic
  - Asymmetric causation
  - Cause/condition – outcome
  - Sufficiency
    - Y is present if X is present
    - Y may appear without X – but if X appears, Y is present as well
  - Necessity
    - Y is present only if X is present
    - Y appears only if X appears

# Research goals' affinity

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# Generalization

- Concepts, hypotheses, and theories do emerge from empirical studies. Case study seems to be the basis of many of them
- Hypothesis/theory testing is a form of gaining general knowledge
- Generally possible within population (knowledge applicable across the class of phenomena)

Single-case studies

# Many variables, few observations

- $N = 1$
- King, Keohane, Verba
  - Social reality complex – many factors contribute to the explanation – alternative explanations
  - Measurement error
  - Stochastic error

## Solutions

- Select lower number of variables
  - Aggregate
  - Limit analysis to few variables
- Increase number of cases/within-case observations

# Single-case study

- Gerring argues not a case study – single-outcome study/single-observation study instead
- Question of causality/inference in single-outcome
  - Nested analysis
  - Most-similar analysis
  - Within-case analysis
- Yin argues single-case designs are meaningful only after case selection (critical, unusual, common, revelatory, longitudinal)