



# Week 1: What is a Research Design?

29 August 2022  
URBST 200-02  
Lecturer: Erin Lilli





# Why do we conduct research?

- Student responses:
  - To explain a common phenomenon
  - To explain something naturally occurring in nature
    - Explain WHY something is occurring
  - To determine if there is a cause and effect relationship



# Social Research asks two basic types of questions...

**What** is going on (descriptive)?

**Why** is it going on (explanatory)?



# Descriptive Research

- Describes a phenomena or event
- Examples of government sponsored descriptive research:
  - census population (counts of who, where, changes over time)
  - social indicators and economic information (e.g. educational attainment, household income, immigration status, health...etc.)
- Descriptions can be concrete
  - Describe the racial make up of a neighborhood
  - Describe the gender mix at a school
  - Age of and gender of a homeless population
- Descriptions can be abstract by asking certain types of questions
  - Ex) Is the level of housing precarity increasing?
  - Ex) How gentrified is this neighborhood?
  - Ex) How healthy is this community?

# Descriptive Research

- Accurate and meaningful descriptions are critical in research – they help inform policy, highlight the existence of social problems, and challenge assumptions about the way something has been understood society.
  - For example, understanding the relationships between poverty, structural/racial discrimination, and opportunity structures can highlight the hardships.
- Good descriptions provoke “why” questions in explanatory research.
  - The original premise (the observation/description) must be factually sound otherwise asking “why” that thing is happening would be pointless.



# Descriptive Research

- Example of “why” questions...
  - If we describe increasing gaps in wealth along racial dimensions. We want to know why this is the case. The premise that there IS increasing gaps in wealth along racial dimensions must be true within the given parameters of the observation.
- Want to avoid mindless fact gathering or unfocused surveys, studies etc as they will fail to provoke a why question or provide any basis for **generalization**.

# Explanatory Research

- Focuses on “why” questions.
- A **Research Design** is fundamentally affected by whether the researcher is doing descriptive research or explanatory research.
  - You can think of your final neighborhood profiles as descriptive research since it will be describing the neighborhood using different types of data collected using different methods.
- You need *hunches* (educated guesses) to guide you as to what kind of data or information you need to collect.
  - For example, if you are asking “why are rates of eviction rising in this part of the city?” You need to have some hunches as to why this might be and collect data in an effort to support that hunch.
  - You may develop multiple and incompatible hunches, but after enough data collection you start to see which hunches work **empirically**.

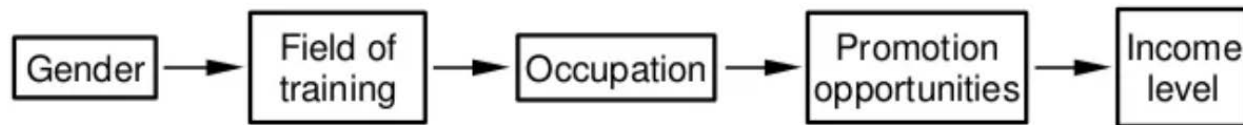
# Explanatory Research

- Answering “why” questions entails the development of a **causal explanation**.
  - Phenomenon Y is affected by factor X.
  - These can be simple or complex.
  - There are three types of causal relationships:
    - Direct
    - Indirect/ Chain
    - Complex combination

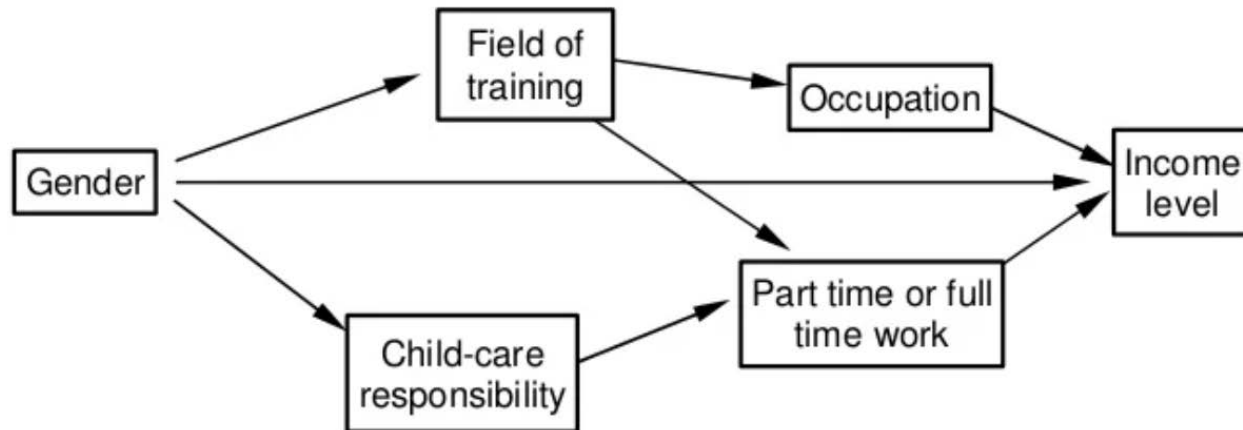
a) *Direct causal relationship*



b) *Indirect causal relationship: a causal chain*

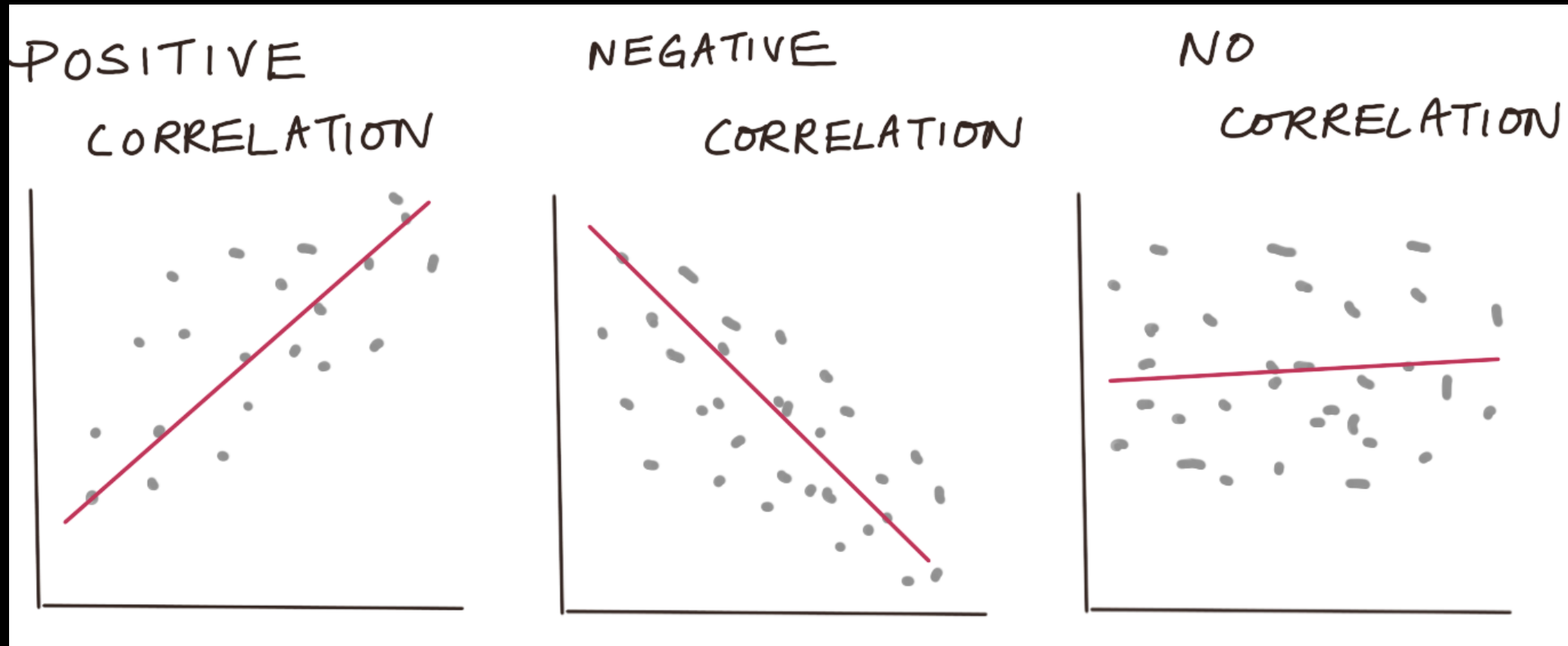


c) *A more complex causal model of direct and indirect causal links*



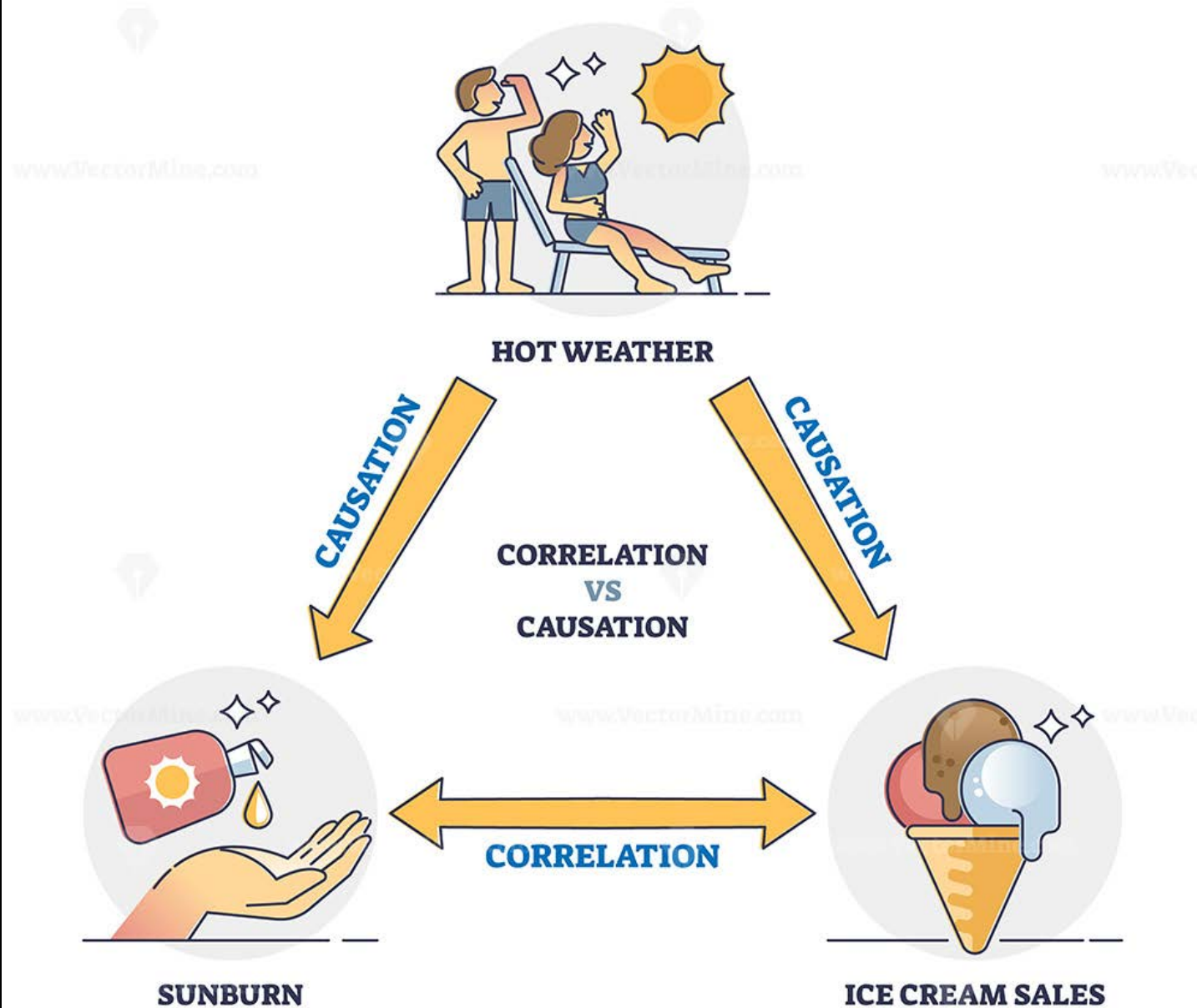


- CORRELATION DOES NOT EQUAL CAUSATION.
- Two events may be coincidental whereby one does not cause the other. Correlation also doesn't imply causation.



Correlation does not imply causation.

There is a third/outside factor that is responsible.



- Confusing causation with correlation also confuses...
  - ...prediction with causation AND
  - ...prediction with explanation
- When two events or characteristics are correlated, we can predict one by the other.
  - For example, knowing the presence of speculative development increases our capacity to predict if renters will be displaced. But this does not mean that speculative development affects renters. Predicting displacement on the basis of speculative development does not tell us *why* renters are displaced.

“Good prediction does not depend on causal relationships. Nor does the ability to predict accurately demonstrate anything about causality” (de Vaus, 2001, p. 4)

- We can observe correlation, but we cannot observe cause in social research. We can only infer causation.
- These inferences are fallible and only indirectly linked to observables.
- We must minimize our chance of incorrectly saying that a relationship is causal when it, in fact, is not.

“One of the fundamental purposes of research design in explanatory research is to avoid invalid inferences” (p. 4).

# Causation

- **Deterministic Causation**

- X is said to cause Y if, and only if, X *invariably* produces Y.
  - Seeks to establish causal *laws*, such as water boils at 100 degrees C.
  - But these laws are never so simple, they always operate under specific *conditions*.
- Other things being equal, then X will always produce Y.
  - This is odd to say in social science, there is a complexity to human behavior that means we can't have causal statements in the social sciences.

- In the social sciences causal thinking is **probabilistic**.

- While human behavior is not determined, it is constrained, there for we can predict the probability or likelihood of an outcome given certain factors.
- While we can only have probable causation in the social sciences; popular ideology and political discourse **lend a deterministic expression** to some relationships; e.g. race or gender invariably determines one's position on society.

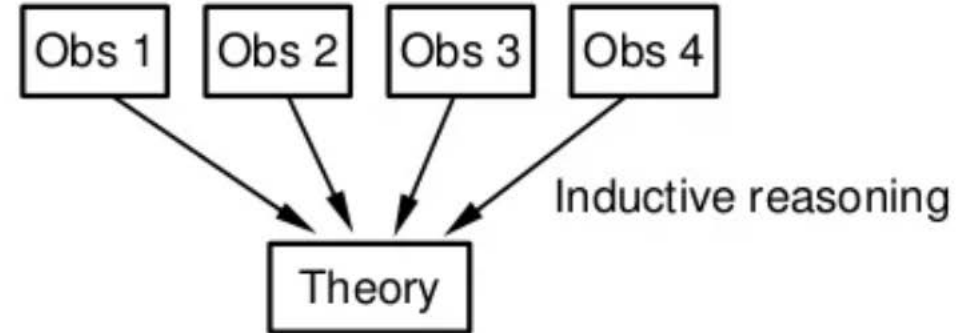
# Theory

Theories are how the social sciences attempt to answer “why” questions.

## *Theory building approach*

Empirical level

Start here

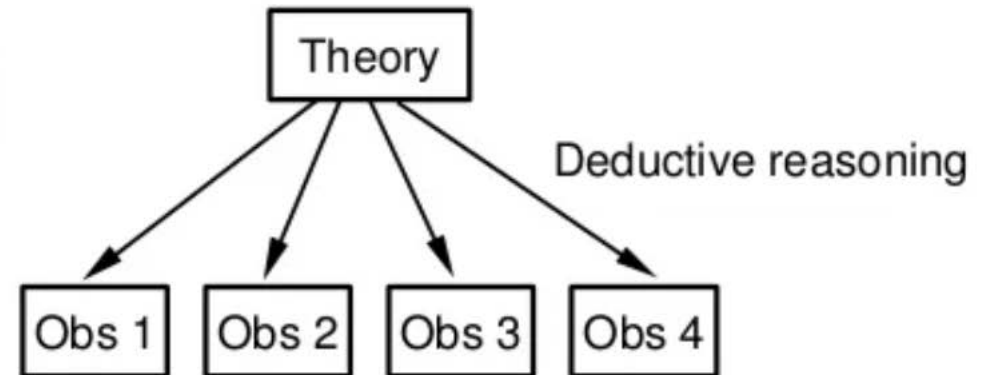


Conceptual-abstract level

## *Theory testing approach*

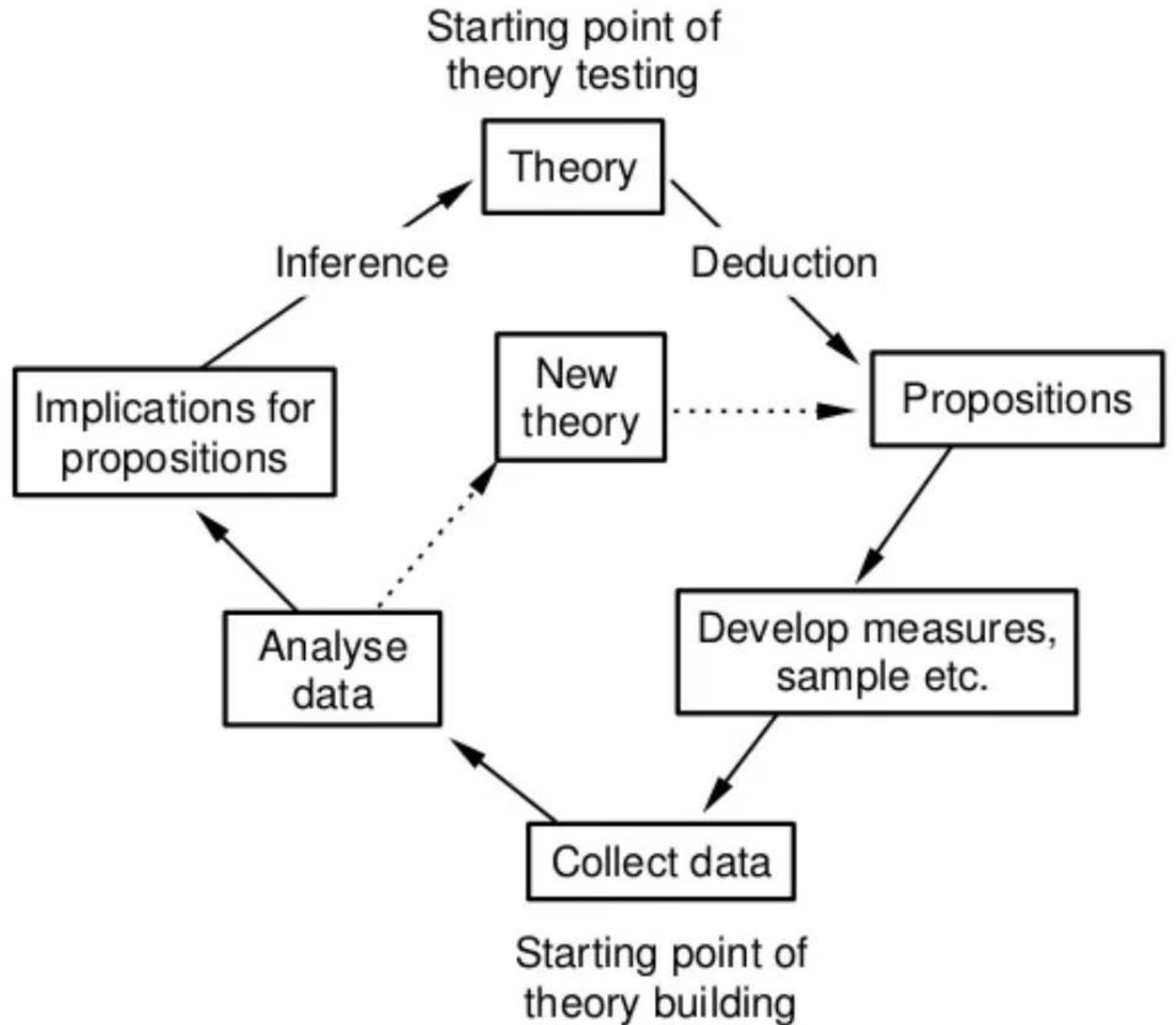
Conceptual-abstract level

Start here



Empirical level

The logic of the research process



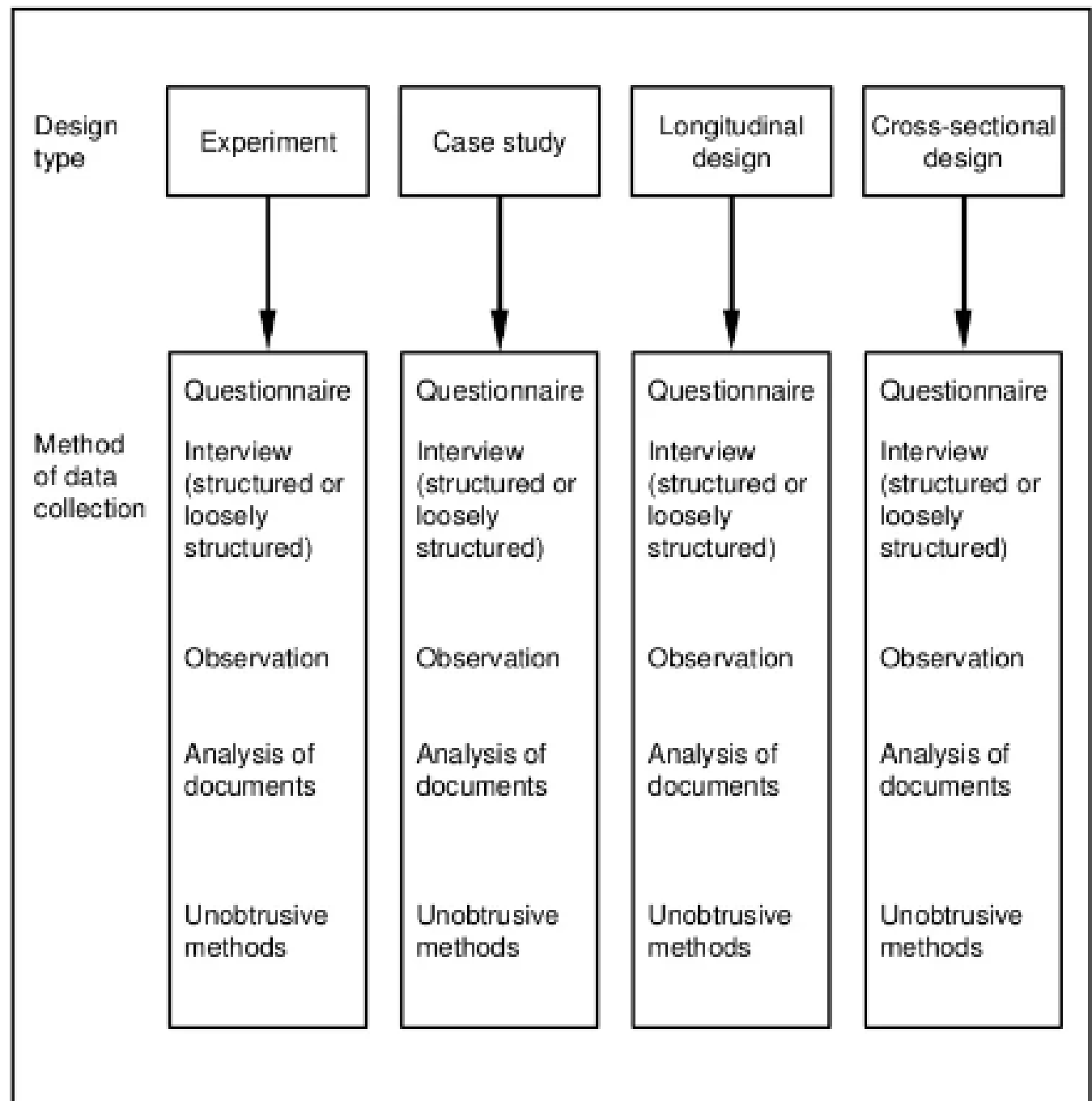
# What is Research Design?

“The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible”.

- Determining what evidence needs to be collected come before the method of data collection.
- Design (a logical structure of inquiry):
  - Any data collection method can be used for any design.
  - Can be **quantitative** (numerical or statistical in method, objective measure of reality, independent of researcher)
  - or **qualitative** (involves discovery, unfolds in natural setting, actual experiences)



# Relationship between research design and data collection methods



# Research Design: a blueprint for action

- Deciding
  - Which paradigm to use
  - What the core research questions are
  - Which methodological alternatives and approaches to data collections are best for the project

**A paradigm is a framework for interpretation or a way of viewing the world**

# Research Design: a decision-making process

- Decisions of design guided by three main things
  - Questions asked
  - Resources at hand
  - Characteristics and constraints of research setting
- Initial Tasks
  - Frame question
  - Conceptual starting point, theory, hunches
  - Identity characteristics of population to study
  - Find and obtain access to research site
  - Identify and establish relationships
- More technical
  - Data plan
  - Data method
  - Analytic procedures
  - Confidentiality plan
  - Guidelines for interpretation and dissemination



# “Research Design” for this class

- Decisions of design guided by three main things
  - Questions asked
  - Resources at hand
  - Characteristics and constraints of research setting
- Initial Tasks
  - Frame question
  - Conceptual starting point, theory, hunches
  - Identity characteristics of population to study
  - Find and obtain access to research [data sets] and site
  - Identify and establish relationships
- More technical
  - Data plan
  - Data method
  - Analytic procedures
  - Confidentiality plan
  - Guidelines for interpretation and dissemination

# Paradigms in Research Methods by Williams.

**Post-structuralist:** Critique assumptions that natural and social objects exist as pre-given, singular entities with fixed identities. This paradigm is about social processes (e.g. power) that lead to production and dissemination of objects as entities. [In other words, entities are formed through relations to other entities and systems of entities]. (Shaw, Ian Graham Ronald, Deborah Dixon and John Paul Jones III (2012). Theorizing Our World. In Research Methods in Geography. Gomez, Basil and John Paul Jones III eds. Malden and Oxford: Wiley Blackwell)

**Post-positivism** rejects the positivist approach that a researcher can be an independent observer of the social world. Post-positivists argue that the ideas, and even the particular identity, of a researcher influences what they observe and therefore impacts upon what they conclude. Post-positivism pursues objective answers by attempting to recognise, and work with, such biases with the theories and knowledge that theorists develop. (<https://www.e-ir.info/2021/09/25/positivism-post-positivism-and-interpretivism/>)

# Terms in Research Methods by Williams.

**INDUCTIVE  
reasoning**

**VS**

**DEDUCTIVE  
reasoning**

No matter how unrealistic that sounds, in many fields, such as science and law, "proof" simply doesn't exist; there can only be facts and evidence that lead you to certain conclusions.

## **INDUCTIVE REASONING**

- Someone who uses **INDUCTIVE** reasoning makes **specific observations** and then draws a **general conclusion**.

## **DEDUCTIVE REASONING**

- **DEDUCTIVE** reasoning is a **specific conclusion** follows a **general theory**.

# Term in Research Methods by Williams.

**Natural Setting/Natural Experiment:** observational study in which an event or a situation that allows for the random or seemingly random assignment of study subjects to different groups is exploited to answer a particular question. Natural experiments are often used to study situations in which controlled experimentation is not possible, such as when an exposure of interest cannot be practically or ethically assigned to research subjects. Situations that may create appropriate circumstances for a natural experiment include policy changes, weather events, and natural disasters. Natural experiments are used most commonly in the fields of epidemiology, political science, psychology, and social science. (<https://www.britannica.com/science/natural-experiment>)

## Cross-Sectional Research: Populations and Sample Surveys

- Confirm statements of key informants in ethnographic research
- Population surveys – asking entire group
- Sample survey – larger populations
  - Statistics – generalize to a larger population
  - ‘Survey’ can be a design and a method for data collections
  - Limitations to utility and validity, only use when:
    - Population and kinds of questions to ask already known
    - Researcher is familiar with language and vocab of participants
    - Researcher knows whether concepts and ideas used in study are meaningful to participants
- Construct Validity – the match between the meaning intended by the researcher and the meaning assumed by the respondent
- **Cross-sectional** – examine phenomena at single point in time
  - **Longitudinal studies** – trend or panel
    - Trend – repeat survey at interval from different sample of the same group
    - Panel – select large sample and repeat survey at intervals to same group (Attrition issues)

## Experiments

- Pre/post designs – no comparison group but intervention is assessed before and after
- Procedural validity – comparability of the treatment, innovation, or intervention
- Limitation is the setting, they must take place in lab, clinic, institution etc.

## Case Studies and Ethnographies

- Case studies focus on a single unit for investigation
- Ethnographies are case studies focused on a single entity - culture
  - Case studies that are NOT ethnographies are: bios, oral/clinical histories etc.
  - People in natural settings (not necessarily nature)
- Researcher typically lives in or with groups studying
- Methods: Interviews, questionnaires, standardized tests, elicitations, archives, audio-visual, photos, artifacts and maps etc.



# Methods in Erin's Research

