

# Framing Hypotheses in Social Science Research

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## Framing Hypotheses

- What is a hypothesis?
  - Predicted answer to a research question.
- A research question states what we are trying to find out.
- Hypothesis predicts the answer to that question, with at least some confidence

## Hypotheses...2

- On what basis we can make such a prediction?
- Why do we expect to find this rather than something else?
- Only two answers to this question:
  - Because another researcher has found this: this answer the question, but not explain the prediction
  - The other answer involves explanation; we can call this explanation theory
  - Hypothesis follows as an 'if-then' proposition

## Hypotheses...3

- In testing the hypothesis, we are testing the theory behind it
- As it is a hypothetic-deductive model of research we can only disprove the 'if' part, not 'prove' it by validating the 'then' part.
- Thus knowledge is developed by disproving theories
- This particular structure of scientific inquiry leads to two important concerns:

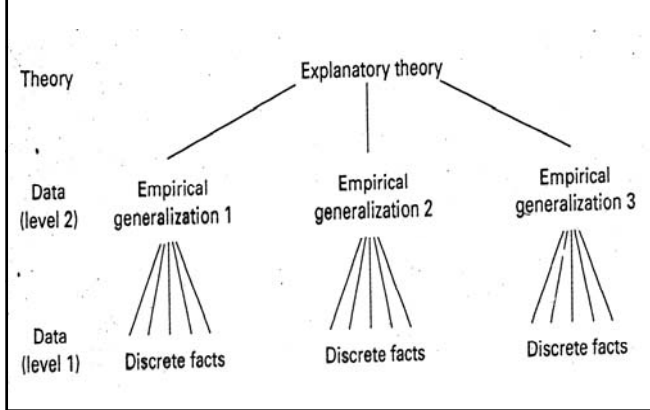
## Hypotheses...4

1. When is it important to have hypotheses?
  - When we do have an explanation/theory in mind behind the hypotheses
  - If we do not, then we simply proceed with research questions
  - There is no logical difference between research questions and hypotheses when it comes to their implications for design, data collection and analysis
  - If we can predict, then ask 'why do we predict this, not something else'.

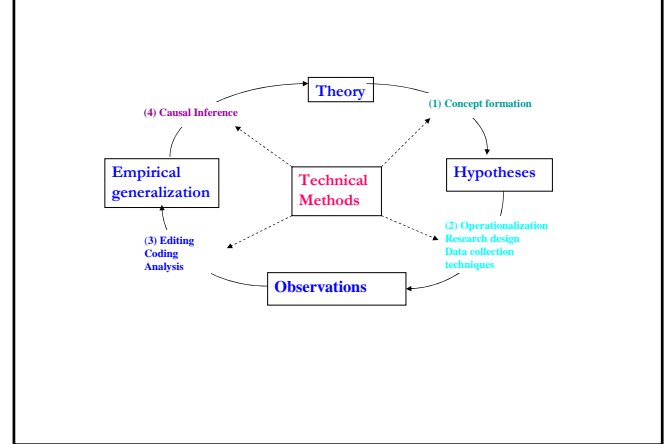
## Hypotheses...5

2. The second implication of this way of seeing hypothesis concerns the overall structure of scientific knowledge
  - Hypothesis is derived from and explained by the higher-order theory above it
  - It shows the hierarchical structure of knowledge
  - There are concepts and propositions at different levels of abstraction in a research project and therefore there need to be logical links between them

## The structure of scientific knowledge



## The logic of social research or 'socio-logic'



## Other Central Issues in Social Science Research

- **Description versus Explanation**
- **Question-Method connections**
- **Pre-specified versus Unfolding: structure in research questions, design and data**
- **Linking of concepts and data**

## Description versus Explanation

- Description is concerned with "what"
- Explanation is concerned with "why"
- Explanatory power is more powerful than descriptive power
  - Why Explanation?
- **Theory-first research**
- **Theory-after research**
- Correlation between the purpose of research and the approach used in the research (quantitative or qualitative)

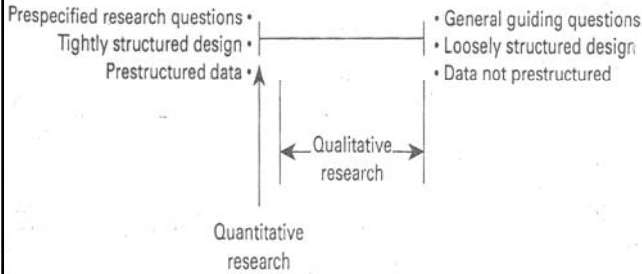
## Question-Method connections

- The match between research questions and research methods should be close
- This can be done if methods follow questions
- We first need to establish what we are trying to find out, and then consider how we are going to do it
- Methods should follow from questions: **How we do something in research depends on what we are trying to find out**

## Pre-specified versus Unfolding: structure in research questions, design and data

- Empirical research has an important pre-empirical stage
- **Involves a careful analysis of research questions, and clarifies the conceptual, analytical, technical, and methodological considerations**
- How much should be pre-planned?
- How much should emerge as research develops?
- **Pre-specified refers to how much structure (definite shape and direction) is introduced ahead of empirical work, as opposed to during the empirical work**

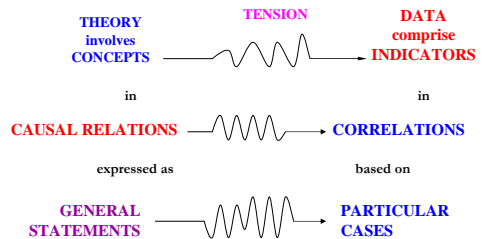
## Pre-specified versus unfolding: the timing of structure



- There is a continuum of possibilities
- Knowing what we are looking for
- How we are going to get it
  - What data, how to collect, and analyse
- Structure is needed, but the timing of it in the continuum.
- Timing of structure depends on the topic and goal of research, researcher's knowledge, availability of theory etc

## Linking of concepts and data

### The tensions between theory and data



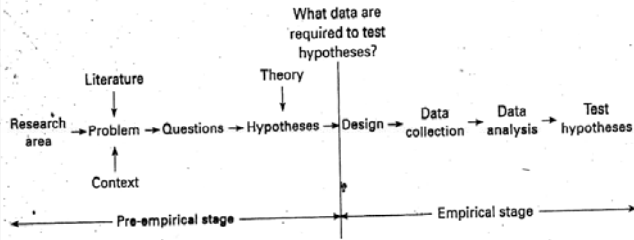
## Research Questions

- General and specific research questions
  - General questions guide our thinking and help organise the project, but not specific enough to be answered
  - Specific research questions follow from general one: they are answered in the research
- The role of research questions
  - they organise the project; give it direction and coherence;
  - they delimit the project, showing its boundaries
  - they keep the research focused during the project
  - they point to the data that will be needed

## A simplified model of research

- Organising research around research questions lead to a simplified model of research
- It stresses:
  - framing the research in terms of research questions
  - determining what data are necessary to answer those questions
  - designing research to collect and analyse data
  - using the data to answer the questions

## Simplified model of research



## Further reading

- Keith Punch (1998) **Introduction to Social Research**, Sage Publications, London.