

**SBS 2000**  
**RESEARCH METHODS**  
**IN SOCIAL SCIENCE:**  
**AN INTERDISCIPLINARY**  
**APPROACH**

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**SOCIAL SCIENCES**

# Objectives

- Rationale for the course
- Role of research in everyday life
- Critical Thinking and the scientific method
- Principles of Economics and Psychological science
- Requirements for scientific research

**How would you go about doing research in your field?**

**What methods would you use?**

# Role of Research in Life

- What are some big decisions or questions you are currently considering?
- Have you “researched” anything today?

# Why learn research methods?

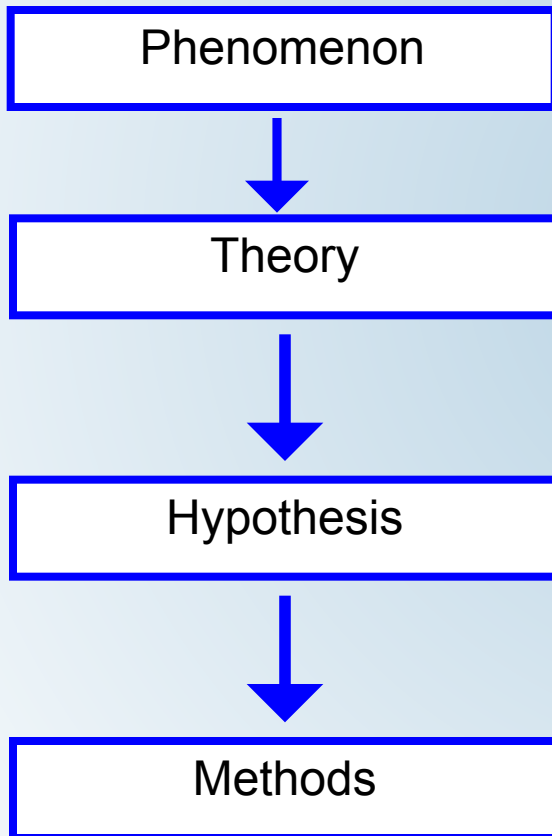
- A core element of the social sciences is how we conduct research.
- Also provides a systematic approach to learning, understanding, and questioning that you can use in all areas of life.
- A transferrable skill to any profession.
- Supports critical thinking.
- And....can be fun!



# *Critical Thinking: Learning to look at the world in more than one way*

- **Critical thinking** involves thinking reflectively, productively, and evaluating the evidence
- Being a critical thinker requires being:
  - open-minded and curious
  - intellectually careful
  - skeptical

- How do the foundations of critical thought map on to scientific discovery?
- Here is one model of the mapping scientific process:





# Mapping the Scientific Process

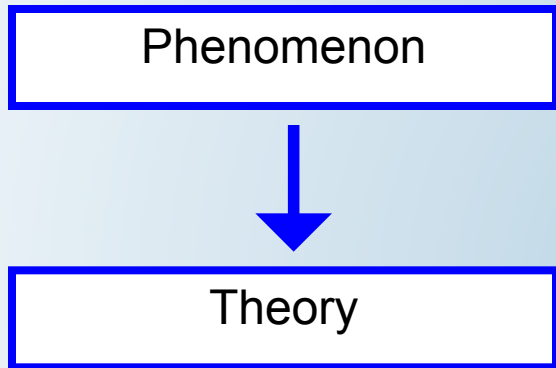
Phenomenon

**Starts with a question:**

- Is there something important about your field that you want to understand better?
- What needs further explanation?
- Are there gaps in our knowledge?
- What new idea, concept, prototype, or design do I want to develop?

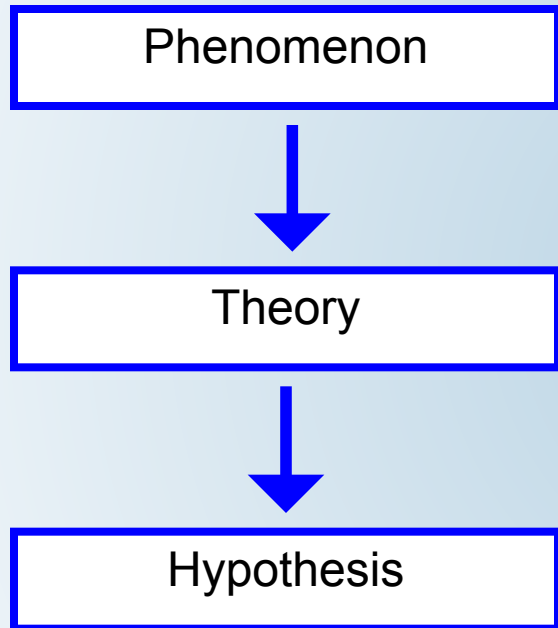
**• Free writing and discuss with partner; share**

# Mapping the Scientific Process



- **Why** or **how** might we explain the phenomenon?
- What principles or assumptions that might underlie what we want to understand better?
- Are there any physical, social, economic, psychological or other perspectives that can help explain how or why this process works?
- What principles can I adopt from a completely different field to better explain this phenomenon?

- One model of the scientific process:

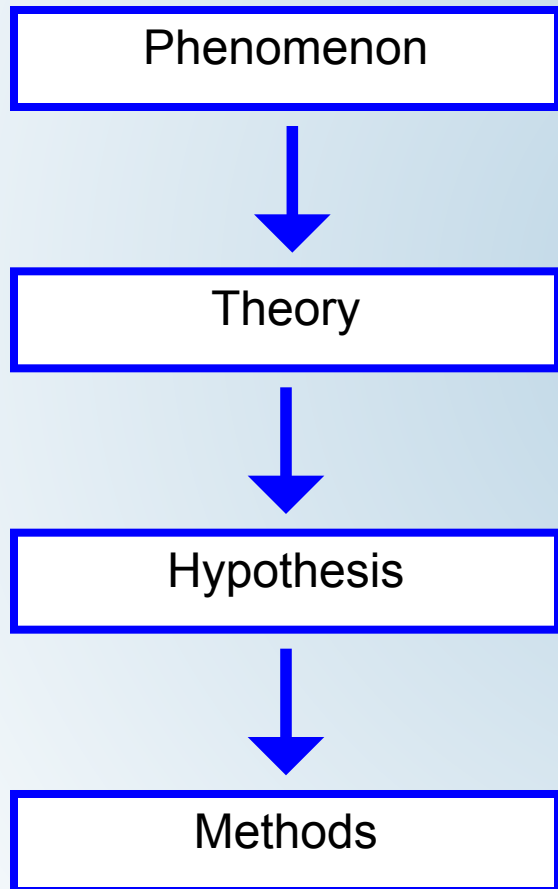


**What concrete and specific prediction can I make about the phenomena from the theory?**

- If I manipulate certain conditions in an experiment, what measurable outcome do I expect?
- If I am observing the environment – e.g., – what patterns or relationships do I expect?

## Critical thinking in science

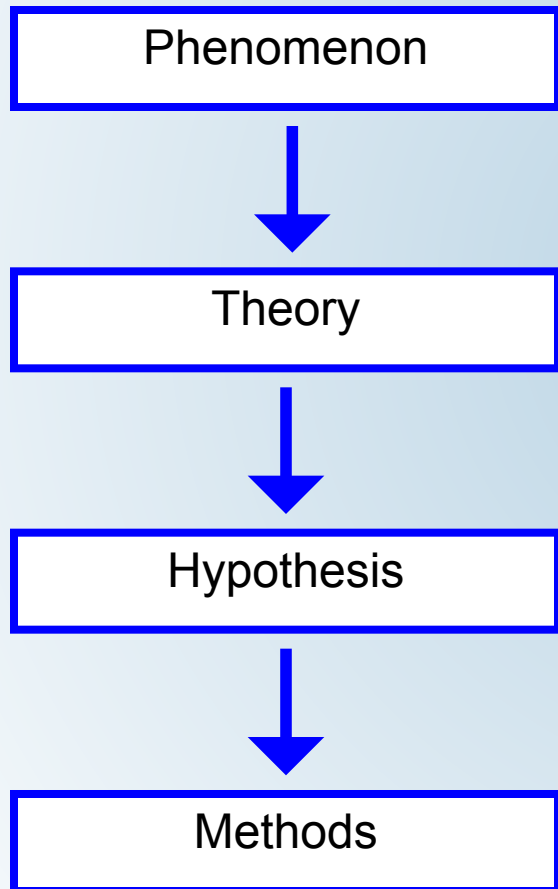
- One model of the scientific process:



### **What empirical evidence will test the hypothesis?**

- What must I measure or observe to determine whether or not the hypothesis is supported?
- How do I assure that the evidence is unbiased and objective?
  - Could anyone repeat my study and get the same results?
  - Are my observations well understood or standard in my field?

# The scientific process/ involves critical thinking throughout:



## Open Minded and Curious;

- We actively seek new or better explanations for natural processes.

## Intellectually careful;

- Articulate clear phenomenon from objective data and observations

## Skeptical;

- Theories must be coherent and logical
- Hypotheses must be specific enough to be tested.
- Without valid empirical evidence all our beliefs are tentative.
- New evidence can always overturn our theories or beliefs.

# Social Science is...

- A way of thinking
- A way of explaining phenomena
- Is based on measurability
- Research methods + statistics help us to be scientists in all our disciplines.

# Two Disciplines in Social Science

- Standard Economics + Psychology =
  - Behavioral Economics

# Rationality in the Standard Economic Model

- Standard economics relies heavily on the **assumption** that people are **rational**
- Standard economics assumes that people
  - are **fully aware** of all the options they have
  - can -- **always and consistently** -- rank their options in accordance with their preferences, and
  - **always choose** the **best** option.

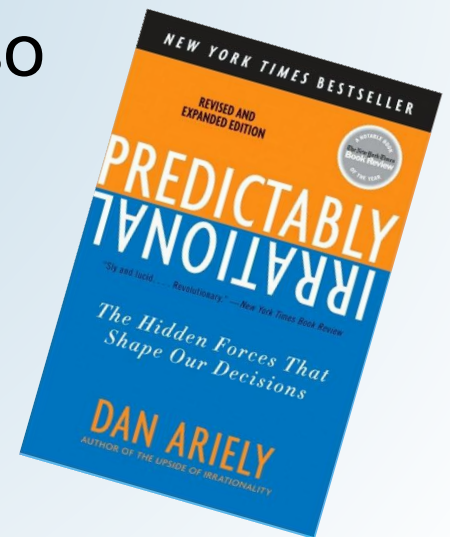


# Rationality in the Standard Economic Model

- People weigh the **opportunity costs** of making one choice over the other.
- In doing so they weigh the **costs and benefits** of each option.
- Why weigh costs and benefits? Because **resources are assumed to be scarce**.

# The Inconvenient Truth

- Clear and voluminous evidence from psychology has shown that the rationality assumptions of standard economics are wrong.
- Evidence from psychology has shown that
  - that we often are irrational, and also
  - that we are *predictably* irrational



# Psychological Research has shown:

- Human biases → can prevent us from thinking clearly and critically
  - Intellectual fallacies

- Error in logical reasoning → allowing our intuition or common sense to get in the way
- Examples:
  - Selective perception
  - Self-fulfilling prophecy
  - Tendency to look for simple explanations
  - Emotion over reason (e.g., road rage)
- *Why is this a limitation?*

- Perception dictated by personal experiences
  - Tied to culture, society, upbringing

Examples:

- A behavioral psychologist seeing all problems as a behavioral issue
  - Judging people based on similarity to others you know
  - Failing to explore issues on more than one level
- *Why is this a problem?*

- Thought processes influenced by language
  - Framing of words
  - Priming of words
- *Why is this a limitation?*

- Accepting explanations without critical evaluation
- Often associated with the power of authority or lasting myth
  - You know what they say...
  - Religion
  - Political systems
- *Why can this be a problem?*
- *How can this limit our interpretation and behaviors?*

# Requirements for Scientific Research

1. Empirical analysis
2. Public verification
3. Systematic observation
4. Controlled environment
5. Parsimony
6. Tentative explanation/conclusions