

**SOCI 101**  
**INTRODUCTION TO**  
**SOCIOLOGY**

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**(DR. K)**

[WWW.MORRISVILLE.EDU/SOCIOLOGY](http://www.morrisville.edu/sociology)

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THEME: Theory and Data

Artist: John Baswell  
 Song: A Wave of Reason  
 Website: [SymphonyOfScience.com](http://SymphonyOfScience.com)

Carl Sagan, Richard Dawkins, James Randi, Mystic MEG

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### B. Doing Social Science

The Scientific Method

Ask a Question

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Research Existing Sources

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Formulate a Hypothesis

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Design and Conduct a Study

↓

Draw Conclusions

↓

Report Results

**1. To ask a question, one must have a perspective; all questioning starts with scientific theory, or a system of ideas intended to explain, especially based on general argumentative premises.**

Figure 2.2

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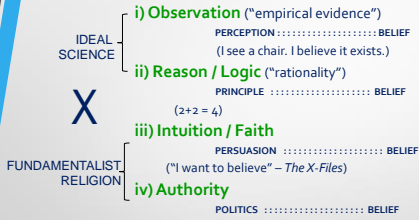
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## B. Doing Social Science

### 2. Upon what foundation are our beliefs?

Knowledge and belief comes in four different ways:



**IDEOLOGY:** a non-scientific system of belief, often religious or political; NOT objectively truthful, yet thought to be "gospel" (absolute truth); for example, "Capitalism", "Communism", or "Christianity"

**BEWARE OF THOSE CLAIMING TO TELL YOU THE ABSOLUTE TRUTH**

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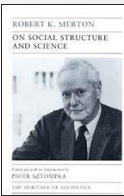
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## B. Doing Social Science

### 3. What are the NORMS of science?

We can use the acronym **NOTTUS** to identify them:

- N = Natural (vs. Supernatural)** – science seeks to explain natural phenomena
- O = Observable (vs. Invisible)** – uses senses and tools to enhance the senses
- T = Testable (vs. Untestable)** – can make predictions; results must be consistent
- T = Tentative (vs. Omniscient)** – science is not all-knowing; hypotheses and theories must always be open to disconfirmation
- U = Uncertain (vs. Certain)** – science has a degree of improbability; there is no such thing as "perfect knowledge"
- S = Social (vs. Isolated)** – science is social; it requires replication of testing by different people and an openness to sharing results (peer review)




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## B. Doing Social Science

**4. On Testing and Evidence:** In science, what is crucial in establishing a truth claim are the **types of evidence** one has to back up that claim. **But not all types of evidence are equally strong.**

- |        |   |  |
|--------|---|--|
| weak   | ↑ | a. <b>Anecdotal and expert evidence</b> (stories from lay people or individual experts).   |
| Strong |   | b. <b>Experimental evidence</b> (not widely used in sociology, because it puts people in "unnatural" situations)                   |
| Qual.  |   | c. <b>Case Studies/Observation over time</b> (very widely used in sociology; can be <b>participant</b> or <b>non-participant</b> ) |
| Quant. |   | d. <b>Surveys and Questionnaires</b> (very widely used in sociology; can collect vast amounts of information)                      |

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## B. Doing Social Science



### 5. What makes a method valuable?

a. **Reliability** means *generalizability of research* or the degree to which the research gives the same results when repeated in different settings.

It is achieved through *large quantity* of results.

(Ex: *surveys and questionnaires* – lots of people can fill them out, but the questions are limited. *Quantitative research* methods often achieve good reliability of results.)

b. **Validity** means *accuracy of research*

or the degree to which the study measures *exactly* the reality it claims to be measuring.

It is a measure of the *quality* of results.

(Ex: *case studies and ethnographies* really get into the details. *Qualitative research* methods achieve good validity of results.)

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## B. Doing Social Science

### 6. What is NOT science?



a. **Non-science:** events or phenomena that simply *do not meet the NOTTUS criteria* and therefore fall outside of the realm of science. This includes any belief system (ideology or religion), philosophy, personal opinions and attitudes, and ethics.

b. **Protoscience:** science that is emerging or nearing fulfillment of the categories of NOTTUS; with more time, and better tools, new discoveries emerge. For example, research on patterns of electricity in our earth's climate system, or *mental telepathy*.



c. **Pseudoscience:** "Pseudo-" means false in Latin and so these are claims that appear to be scientific, but the claims do not meet the strict standards of NOTTUS; for example, *astrology* or *Dianetics (scientology)*.

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