OUTLINE OF LECTURE 1: THE SCIENTIFIC METHOD

1. Why theories?

   - everyone uses them
   - better to be explicit

2. What is a theory?

   - simplification of reality
   - relationship between variables
   - explanatory and dependent variables
   - causal mechanism
   - assumptions
   - causes and consequences

     a) necessary and sufficient conditions
     b) probabilistic causality and tendencies

3. Evaluating theories

   - logical consistency

     a) assumptions not mutually contradictory
     b) conclusions follow from premises

   - empirical validity

     a) falsifiability
     b) experiments
     c) statistical analysis
     d) case studies

4. Selecting a theory

   - comparative theory evaluation
   - do not discard without an alternative
   - explains more
   - fewer auxiliary assumptions