POLS 5377 Scope & Method of Political Science

Week 2 Scientific Inquiry

Human Inquiry & Science

Babbie E. (2016) *The Practice of Social Science,* Chapter 1

Key Questions:

- What are the sources of knowledge?
- What are the potential errors when seeking for knowledge?
- What are the key elements of the foundation of social science?
- What are the some dialectics existed in the social science?

Outline

- **Looking for Reality**
  - How do we build knowledge?
  - Three common sources of agreement reality
  - Common Errors in casual inquiries and some solutions
- **The Foundations of Social Science**
  - Theory, Not Philosophy or Belief
  - Social Regularities
  - Aggregates, Not Individuals
  - Concepts and Variables
- **Some Dialectics of Social Research**
  - Idiographic and Nomothetic Explanation
  - Inductive and Deductive Theory
  - Determinism versus Agency
  - Qualitative versus Quantitative Data

Looking for Reality

- How do we build knowledge?
  - We observe and experience to gain knowledge.
  - Meanwhile, we can't / don't experience everything to claim the knowledge.
    - For example, we did not fly to space to determine the earth is round.
  - At times, your personal observation may contradict common knowledge, and it's likely that you adjust your understandings to fit the majority of the society. For example, the taste of worms.
- Knowledge is built based on Agreement Reality - those things we "know" as part of the culture we share with those around us.

Looking for Reality

- Three common sources of agreement reality
  - Ordinary human inquiry – we, as human beings, have the desire to know the future.
    - We recognize that the future is caused in part by the present.
    - Cause and effect patterns are probabilistic in nature.
    - Human inquiry aims to answer both "what" and "why" questions, and we pursue these goals by observing and figuring things out.
  - Tradition – knowledge based on shared culture understandings
  - Authority – knowledge based on the status of the discovers.

Looking for Reality

- Common Errors in casual inquiries and some solutions
  - Obviously, we know that there are potential dangers to rely on tradition and authority to gain valid knowledge. There are also some common errors that when human beings observe and make arguments.
  - Inaccurate Observation
    - We make mistakes in our observation. i.e., do you remember everyone who you talked to yesterday?
    - What do you mean "talked to"? Do "greetings" count? Does it have to be face-to-face conversation? How about talking on the phone or chatting on Facebook?
    - Solution: make conscious and deliberate observations, and use consistent measurement devices that offer accuracy.

Looking for Reality

- Common Errors in casual inquiries and some solutions (Cont.)
  - Overgeneralization
    - We tend to overgeneralize on the basis of limited observation.
    - After witnessing three bad driving practices with female drivers, you may think that all women are bad drivers.
    - Solution:
      - (1) Large and representative samples are a safeguard against overgeneralization;
      - (2) Replication – repeating a research study to test and either confirm or question the findings of an earlier study

Looking for Reality

- Common Errors in casual inquiries and some solutions (Cont.)
  - Selective Observation
    - We tend to focus on what we believe and ignore those do not fit the pattern.
    - Overgeneralization can lead to selective observation.
    - Once we believe that all women are bad drivers, we tend to focus on those women who have bad practices, which reinforce your belief.
    - Solution: try to find the deviant cases. There are women drive well, and there are men that can't drive!

Looking for Reality

- Common Errors in casual inquiries and some solutions (Cont.)
  - Illogical reasoning
    - When observations contradict our understandings, we tend to ignore the and they are just an exception.
    - For example: the gambler's fallacy: An evening of bad luck at poker may kindle the belief that a winning hand is just around the corner.
    - Solution: use systems of logic consciously and explicitly.
- Science offers a special approach to the discovery of reality through personal experiences, and science protects us from the common pitfalls of ordinary inquiry.

The Foundation of Social Science

- The foundation of social science: logic and observation
  - A scientific assertion must have both *logical* and *empirical support*.
  - **Logic aspect** – scientific theories
    - Theory: A systematic explanation for the observations that relate to a particular aspect of life
  - **Observation aspect** – Data Collection and Analysis
    - Data collection: such as interviews, survey, focus group, experiment…
    - Data analysis: statistics, content analysis…

The Foundation of Social Science

- Theory, Not Philosophy or Belief
  - Science cannot be used to settle value debates.
    - Science can't solve the debates on which is superior?
      - Capitalism or Socialism?
      - Buddhism or Christianity?
  - Social science can help know what is and why. Example:
    - **Path Dependence Theory**: An theory that tries to explain the continued use of a product or practice based on historical preference or use.
    - We can use path dependence theory to explain *why we use QWERTY keyboards*. (https://www.youtube.com/watch?v=OI1F_c8MPVc)

The Foundation of Social Science

- Social Regularities
  - Social research aims to find patterns of regularity in social life
  - What about exceptions?
    - Just because there are exceptions to a social regularity, it does not mean that the regularity is unreal or unimportant
  - People could interfere
    - The conscious will of social actors to upset social regularities does not pose a serious challenges to social science

The Foundation of Social Science

- Aggregates, Not Individuals
  - The collective actions and situations of many individuals
  - Focus of social science is to explain why aggregated patterns of behavior are regular even when individuals change over time

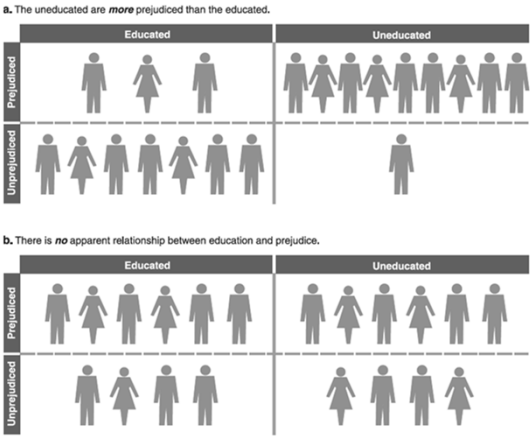
The Foundation of Social Science

- Concepts and Variables
  - In social research and theory, we use variables and attributes to represent social concepts.
  - Variables – Logical groupings of attributes
  - Attributes – Characteristics of people or things

Variables	Attributes
Age	Under 20, 20-30, 31-40….Young, Middle-age, old
Sex	Female, Male
Race	African American, Asian, Latino
Education Level	High School, College, Master, Doctor
Political View	Liberal, Conservative

The Foundation of Social Science

- Concepts and Variables
  - To identify causality, we tend to measure the relationship between two (or more) variables.
  - For example, we try to identify if there is a relationship between "education" and "prejudice".
  - Variable 1: Education, with the attributes of "educated" and "uneducated".
  - Variable 2: Prejudice, with attributes of "prejudiced" and "unprejudiced."
  - As the result, a researcher may find if there is a relationship between the two variables or not.



The Foundation of Social Science

- Some of us may believe that there is a causality between education and prejudice, then we need to build a theory that can explain the relationships.
- In this example, it may be more make sense to argue that: a person being educated or uneducated *causes* a lesser or greater likelihood of the person seeming prejudiced.
- **Independent variables & Dependent variables**
  - **Independent variable** - A variable with values that are not problematical in an analysis, but are taken as simply given.
  - **Dependent variable** - A variable assumed to depend on or be caused by another (the independent variable)
  - In this case, level of education may cause different prejudice behavior. Therefore, education would be the independent variable, and prejudice is the dependent variable.
  - Think it in another way: The likelihood of someone being prejudiced is *dependent* on his/her level of education.

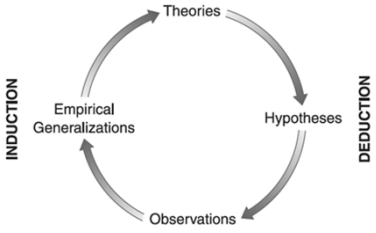
Some Dialectics of Social Science

- Idiographic and Nomothetic Explanation
  - **Idiographic** – An approach to explanation in which we seek to exhaust the idiosyncratic causes of a particular condition of event.
  - **Nomothetic** – An approach to explanation in which we seek to identify a few causal factors that generally impact a class of conditions of event.

Some Dialectics of Social Science

- **Inductive and Deductive Theory**
  - **Induction** – The logical mode in which general principles are developed from specific observations.
  - **Deduction** – The logical model in which specific expectations of hypotheses are developed on the basis of general principles.

*The dialectics will be addressed in detail in later chapters



Some Dialectics of Social Science

- **Determinism versus Agency**
  - **Determinism** – the belief that the human beings behaviors are all influenced / determined by particular social environment and conditions.
  - **Agency** – the belief that individuals have the free will to make their own choices
  - These different beliefs will lead to different research focuses, research designs, and the proposed solutions for addressing social problems.

Some Dialectics of Social Science

- **Qualitative versus Quantitative Data**
  - **Qualitative** – conducting social research with non-numerical data, and relies on verbal description.
    - Pro: richer in meaning.
    - Con: can be subjective, less precise.
  - **Quantitative** – conducting social research with numerical data
    - Pro: data can be analyzed with formulas or mathematical models
    - Con: less rich in meaning
- Choose appropriate method according to the purpose of research

The End