Lecture 4: The Scientific Method

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Some Housekeeping

- I hope Homework 1 went OK
  - How homework grading works
Reading Quiz

The reading for today was:

a) A podcast
b) A video
c) A new york times article
d) A section from the textbook
e) An article from an academic journal
1) What is the main task a literature review accomplish?
   (a) Inform the reader of your research methods.
   (b) Narrow your original research into a specific conclusion.
   (c) Summarize previous findings and identify gaps in the field.
   (d) Challenge prominent scholars in the field.
Reading Quiz

1) What is the main task a literature review should accomplish?
(a) Inform the reader of your research methods.
(b) Narrow your original research into a specific conclusion.
(c) Summarize previous findings and identify gaps in the field.
(d) Present your empirical results
Cumulative & Replicable,
Academic vs. NGO & Private Sector

• Academics ask bigger questions
  • Perhaps more fundamental questions
  • Emphasis on novelty

• NGOs & firms have narrow & specific questions
  • Seeking actionable answers
  • Short timelines
Good academic questions

• We want a question that is both important and tractable.
  • Important socially or scientifically

• The good questions are all taken

• Find a question that is:
  • Becoming more important
  • Becoming more tractable
Big Questions vs. Small Ones

• Big questions answered poorly vs. small questions answered precisely

• Economics vs. political science
Good applied questions

- NGOs, governments, and firms have policy questions.
  - What empirical questions do they need answered?

- Important (to them) & answerable quickly and cheaply
  - Theoretical novelty doesn’t matter
  - Secondary research is most efficient

- In impact evaluation
  - Firms/NGOs want to know how to IMPROVE what they’re doing
    - A/B testing
    - Fine-tuning
    - Magnitude of effects
A topic in search of a puzzle

• We know what we’re interested in
• We have to move from a topic to a research question
  • A “puzzle” is often a collection of related questions.
  • A WHY question
  • Causal inference

To know how we can contribute to human knowledge, we have to know what humanity already knows.
Reviewing the Literature

• First organize the questions.
• Then organize the answers.
  • Abstracts are enough

• These answers form debates.
  • Good and evil

• How well do we know what we think we know?

• What are the most pressing questions that remain?
Sifting through the Sea

• All kneel before Google scholar
  • Bibliographies take you backward in time
  • “cited by” takes you forward
  • USC has access past the paywall

• How do you know if an article is important?
  • Is it in a good journal?
  • Is it highly cited?
    • Only works for older articles (at least 2 years old)
The Structure of an Academic Article

- Introduction
  - Pitch
- Literature review
- Theory
- Research Design
- Results
- Conclusion
  - Implications & future directions
The Lit Review Section

• How should you understand my contribution?
• Give credit to the work I build on.
• Signaling credibility
The Annotated Bibliography

• Bread and butter of research assistants
  • Organization & synthesis
  • Create efficiency for the PI.

• Structure:
  • How do you divide/organization the literature?
    • Which articles are most important?

• For each article:
  • Citation info
  • Abstract
  • Notes re: relevance, quality