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Social Science Research Methods

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Overview

- Philosophy?
- The Game Plan . . .
- Syllabus Timetable
- The Big Picture
- What is Philosophy?
- Why does any of this concern us?
- Philosophy of Science
- Some Questions to Ponder

Philosophy?

- What do the robes of a Ph.D. mean?
- What does Ph.D. mean?
  - Philosophiae Doctor
- What is philosophy?
  - Φιλο–σοφια
  - Love of wisdom
- Why is it important?

Philosophy ?

- "All generalizations are false"
  - Why is this relevant?
  - Why is it humorous?

Introductions

- Name
- Major
- Year
- Nationality
- Hobbies

The Game Plan . . .

- A little background on philosophy and its branches
- Consideration of the relationship between science and the philosophy of science
- Consideration of the special nature (if any) of social science and its philosophy
- Discussion of the relationships among research, science, and scientific method

The Game Plan . . .

- Framing business research as a social science endeavor
- The role of theory and theory development
- Theory and models
- Constructs and hypotheses
- Operationalization, measurement and reliability
- Validity issues

The Game Plan . . .

- Empirical investigation: experiment, quasi-experiment and non-experiment
- Statistical methods for analysis
- Mediation, moderation, suppression
- Qualitative methods as alternatives
- Social science research methods as applied in business research
  - We will look at specific papers!
- Practicing the skills we have learned . . .

Syllabus

- Memorandum
- Contact Information
- Textbooks
- Objectives
- Background
- Grading
- Assignments
- Participation
- Examinations
- Academic Integrity
- Withdrawal Policy
- University Closings
- About the Instructor

Timetable

- Class
- Date
- Topic
- Readings
- Assignments

Timetable

- Philosophy of Science
- Social Science Methods
- Accounting & Organization Management / International Business Research

The Big Picture

- Class participation counts!
- Each week you must submit a list of questions on the readings
- There will be an Essay instead of a Mid-Term
- You will prepare a Research *Proposal*
- The final class will include Proposal presentations
- The point of the Final Examination is to practice for the Qualifying Examination
- *My role is to facilitate your learning*
- *You should be learning from each other not just from me, and not just by yourself – nor just in class*

The Big Picture

- Clearly the class is designed round the twin assumptions that you will all come to class prepared, and that you will all participate actively
- Trust me, there is no alternative!
- As well as learning new material we will be developing and practicing the professional skills of academic researchers

What is Philosophy?

- An intellectual activity
- A conceptual discipline
- It looks at every aspect of life and asks the ‘big’ questions
- Conceptual analysis
- Method of doubt
- Phenomenology

What is Philosophy?

- Philosophical questions
- ‘First order’ and ‘second order’ language
  - “A caused B”
  - “What do we mean when we say ‘A caused B’”?
- Two fundamental styles of questions:
  - What is the nature of reality and the structure of the world?
  - What can we know for certain and what makes sound evidence?

Branches of Philosophy

- Metaphysics
- Epistemology (Theory of Knowledge)
- Logic
- Philosophy of Science
- Philosophy of Mind
- Philosophy of Language
- Moral Philosophy (Ethics)
- Social and Political Philosophy
- Philosophy of Religion
- Aesthetics

Metaphysics

- ‘After physics’ – Aristotle
- Categories
- Substance and accident
- Platonism
- Dualism
  - Mind/body
- Ontology
- Causation
- Mereology (?)

Epistemology

- Knowledge
  - Justified true belief?
- Knowing that / knowing how
- Gettier counterexamples

Epistemology

- Belief
- Truth
  - “No theory” theory – disquotation theory
  - Correspondence theory
  - Coherence theory
  - Pragmatic theory
  - Assertability theory
- Justification
  - Evidence
  - Argument

A Preview of Philosophy of Science

- A second order criteriology
- Largely concerned with metaphysics and epistemology
- Is social science different?
  - Explanation v. prediction
  - Choice
  - Folk psychology
  - Reasons and causes
  - Reduction
  - Emergent properties
  - Supervenient properties
  - Are all emergent properties supervenient?

A Preview of Philosophy of Science

- A property of an object is *emergent* if it is possessed by no part of the object
- *Supervenience* is a dependence of one set of properties on another
  - Property A is *supervenient* on Property B if a difference in property A implies a difference in property B
  - The chemical properties of water (e.g., freezing at 0° C) are supervenient on the physical properties of hydrogen and oxygen
- Chemicals cannot be ‘committed’, yet doctoral students, though composed entirely of chemicals, can; is the emergent property ‘committed’ supervenient on chemical properties of students?

Why does any of this concern us?

- As business researchers
  - We seek the truth
  - We look for explanations
  - Often we look for causes
- Many of the 'preferred' methods we use for these investigations are *scientific*; i.e., we practice science
- How can we expect success if we do not understand what we mean by truth, explanation, cause, nor know what methods are effective for their discovery?
- Reflecting on such questions is the task of the philosophy of science

Why does any of this concern us?

- Did low interest rates really ameliorate the recent economic melt-down?
  - What does it mean to pose this question?
  - How can we investigate it?
- Similarly, does excessive abuse of discretionary accruals increase or decrease stock prices?
  - What are the difficulties with articulating and investigating questions like this?

Why does any of this concern us?

- As academic researchers it is our responsibility
  - Not to take things at face value
  - Not to take anything for granted
  - To sharpen and clarify the ideas used to frame and formulate the questions we investigate
  - To demand, and to supply, reasons for claims made
    - Theoretical
    - Empirical

Why does any of this concern us?

- To require evidence not anecdote
- To develop inquiring attitudes
- To use our experience of the business world to inform, not to subvert, true research
- To understand that research is a discipline requiring skill, methods, application . . . and good fortune
- To hypothesize . . . and to test . . .
- . . . and sometimes, to explain, to predict, and to control
- To develop a philosophical attitude

Why does any of this concern us?

- Be aware that, commonly, different researchers, at different times, may use the same terms and expressions to mean different things . . . and reach different conclusions
- When you read, be demanding as to what key terms mean
- When you write research papers, be clear as to what key terms mean
- Beware, words are tricky . . .

Why does any of this concern us?

- Consider the meaning of:
  - Scientific methods
  - Philosophical methods
  - Historical methods
- Are the adjectives here analogues?
- Consider:
  - Jewish science
  - Jewish philosophy
  - Jewish history ?

Philosophy of Science

- The philosophy of science is an important and valuable place for us to begin
- Nevertheless, we can only afford to spend a little less than 1/3 of our time studying it
- There are numerous alternative approaches that one might take
  - Historical
  - Topical
  - Systematic

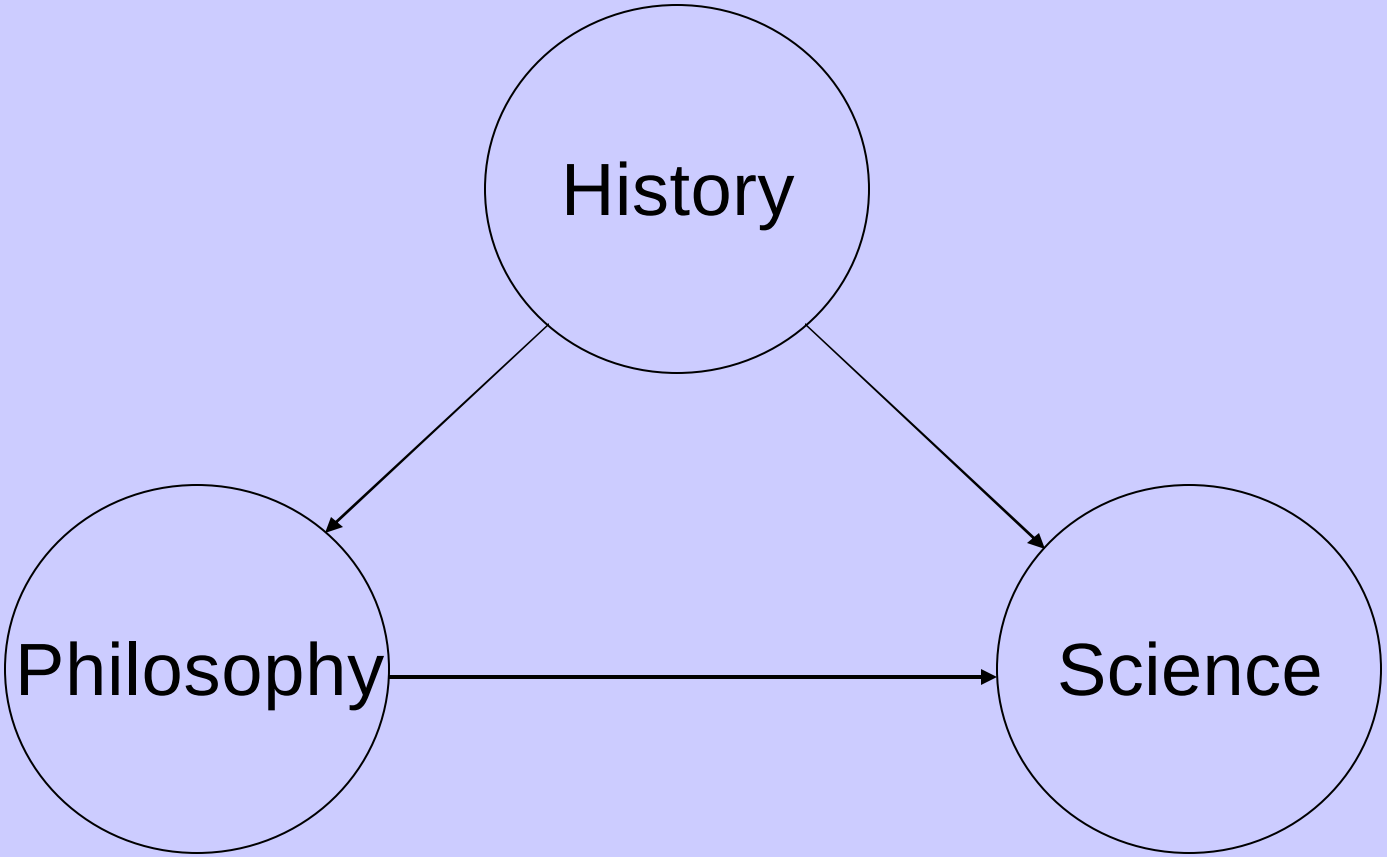
Philosophy of Science

- Historical
  - Following the development of ideas over time
  - Noting that different philosophers re-frame and re-formulate familiar problems in new forms
- Topical
  - Studying alternative views on certain key topics
    - Causality
    - Laws of nature
    - Etc.
- Systematic
  - Developing a particular ‘position’ from which problems are considered
    - Sir Karl Popper and falsificationism

Philosophy of Science

- We will begin with a short historical survey, based on Losee's book
- Then we will use Chalmer's book to consider key topics in twentieth century philosophy of science
- We will use a number of short summaries to consider whether social science poses different or additional problems
- We will *not* adopt a systematic approach

Philosophy of Science



Greek Philosophy of Science

- Aristotle's Inductive-Deductive Method
  - Observations
    - lead by induction to
  - Explanatory principles
    - which by deduction lead to
  - Statements about the observations
- Induction
  - By enumeration
  - By 'intuition'
- Deduction
  - Syllogism
- Genuine scientific knowledge has the status of necessary truth

Greek Philosophy of Science

- Extralogical requirements of scientific explanation
  - Premises must be true
  - Premises must be indemonstrable
  - Premises must be better known than the conclusion
  - Premises must be *causes* of the attribution in the conclusion
- Causes must be distinguished from accidental correlations
- A causal relation
  - Is true of every instance of the subject
  - Is true of the subject precisely
  - Is “essential” to the subject

Greek Philosophy of Science

- Aristotle's Four Causes
  - A prerequisite for scientific explanation
  - Formal cause
    - Nature, shape or design – general conditions
  - Efficient cause
    - What brought it about (closest to our modern term)
  - Material cause
    - Physical substance
  - Final cause
    - Purpose or intention (telos)

Greek Philosophy of Science

- Pythagorean philosophy
  - Mathematical harmony provides insight into the structure of reality
- "Saving the appearances"
  - Do mathematical relations that fit observed phenomena count as explanations?
  - Superimposing mathematical relations on phenomena "saves the appearance" but does not necessarily explain why the phenomena are as they are

Greek Philosophy of Science

- Deductive systematization (cf. Euclid, Archimedes)
  - The structure of a completed science should be a deductive system of statements
    - Axioms self-evidently true
    - Theorems deduced from axioms
    - Deductions make contact with reality

Atomism

- All that is real is the motion of atoms through the void
  - Entirely materialistic
    - No place for spiritual values, purposes, etc.
  - Ad hoc explanations
    - Unverifiable

Medieval Philosophy of Science

- Robert Grosseteste
  - Affirmed inductive-deductive pattern
  - Described as ‘resolution’ and ‘composition’
  - Hence subsequently known as the ‘Method of Resolution and Composition’
  - Developed inductive precursor to Mills’ ‘Joint Method of Agreement and Difference’
  - Method of Falsification
    - Used to eliminate all but one of competing explanations

Medieval Philosophy of Science

- Roger Bacon
  - Grosseteste's pupil
  - Emphasized accurate and extensive factual knowledge
  - 'First prerogative'
    - Principles induced by 'resolution' subjected to test of *further* experience
  - 'Second prerogative'
    - Data generated by active experimentation

Medieval Philosophy of Science

- Duns Scotus
  - Method of Agreement
    - ‘e’ *can be* the effect of a circumstance present in every instance
    - Establishes ‘aptitudinal unions’ only, not necessities
- William of Ockham
  - Method of Difference
    - A circumstance present when ‘e’ is present, and absent when not, *can be* the cause of ‘e’
  - Ockham’s Razor

Medieval Philosophy of Science

- Necessary Truth
  - Aristotle
    - First principles of science are necessary truths
  - Duns Scotus
    - Sense experience is sufficient to *recognize truth* of a first principle, but not to *prove* its necessity
    - A first principle is true in virtue of the meaning of its terms
    - Empirical generalizations are contingent
  - Nicholas of Autrecourt
    - Necessary truths satisfy the Principle of Non-Contradiction

Saving the Appearances

- Copernicus
  - A Pythagorean approach
    - The sun centered system was more than just a computational device
- Osiander
  - Took a contrary view of Copernicus' theory
- Galileo v. Cardinal Bellarmine
  - Despite disclaimers, Galileo took Copernicus' view
- Kepler
  - God as mathematician
  - Basically Pythagorean, but some suspect developments

Saving the Appearances

- Bode's Law

Planets:	Mercury	Venus	Earth	Mars	Asteroids	Jupiter	Saturn
Predicted:	4	7	10	16	28	52	100
Actual:	3.9	7.2	10	15.2	-	52	95.4

Saving the Appearances

- Bode's Law

Planets:	Mercury	Venus	Earth	Mars	Asteroids	Jupiter	Saturn	Uranus
Predicted:	4	7	10	16	28	52	100	196
Actual:	3.9	7.2	10	15.2	-	52	95.4	191.9

Confirmed? Real?

Saving the Appearances

- Bode's Law

Planets:	Mercury	Venus	Earth	Mars	Asteroids	Jupiter	Saturn	Uranus	Neptune
Predicted:	4	7	10	16	28	52	100	196	388
Actual:	3.9	7.2	10	15.2	-	52	95.4	191.9	300.7

Discredited?

Saving the Appearances

- Bode's Law

Planets:	Mercury	Venus	Earth	Mars	Asteroids	Jupiter	Saturn	Uranus	Neptune	Pluto
Predicted:	4	7	10	16	28	52	100	196	(388)	388
Actual:	3.9	7.2	10	15.2	-	52	95.4	191.9	(300.7)	395

Rehabilitated?

Some Questions to Ponder

- Is all research scientific?
  - The former President of the A.A.A. tells me so
    - Do you agree?
- Must non-scientific research be bad research?
- What makes some science “good” science?

Some Questions to Ponder

- "Stubbing my toe causes me pain"
  - What does this mean?
- "Time pressure causes auditors to make more mistaken decisions"
  - What does this mean?
  - How is it similar?
  - How is it different?