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Social Science Research Methods

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Overview

- The Philosophy of Social Science
- Necessary Truths
- Accounting Research
- Theories, Hypotheses and Models
- Social Science Research
- The Scientific Approach
- Problems and Hypotheses
- Constructs, Variables and Definitions

The Philosophy of Social Science

David-Hillel Ruben

- Different concepts used in social science
- Different generalizations (transparency of society to social agents)
- Individualism v. holism
  - Conceptual
  - Metaphysical
  - Explanatory
  - (Ethical)
  - Related but not equivalent

The Philosophy of Social Science

- Conceptual individualism
  - All social concepts can be translated without remainder into psychological concepts
- Metaphysical individualism
  - Social phenomena are merely (sets of) individuals in certain psychological states
    - Mereology
- Explanatory individualism
  - Every explanatory chain containing a social fact at some point (backwards) becomes social-fact free and remains so

The Philosophy of Social Science

- Causal and non-causal explanations
  - Do they apply equally to social science?
  - Functional explanation (asymmetric)
  - Structural explanation (based on sets of relations)
- Action
  - Austere theories
  - Prolific theories
- Are basic actions transparent?

The Philosophy of Social Science

- Action explanations
  - What kind of explanations are they?
    - Causal
    - Interpretive / hermeneutic
    - 'Weakness of will'?
- Norms, rules, conventions, tradition
- Rationality: individual v. social
- Social relativism: many varieties
- Methodology: paradigms and programmes
- Values in social science

The Philosophy of Social Science

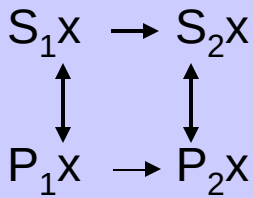
- Special Sciences
  - Are special sciences fully reducible?
  - What is ‘the unity of science’ and how can we account for it? How is it related to the generality of physics?
  - Bridge laws and physical laws
  - “There are special sciences not because of the nature of our epistemic relation to the world, but because of the way the world is put together: not all the kinds (not all the classes of things and events about which there are important, counterfactual supporting generalizations to make) are, or correspond to, physical kinds.” (Jerry Fodor)

The Philosophy of Social Science

- Special Sciences
  - Saying that *physics is basic science* and saying that *theories in the special sciences must reduce to physical theories* are often taken to be the same thing
  - However, according to Fodor, the 'unity of science' is a much stronger, and much less plausible, thesis than the generality of physics
  - Token physicalism: all the events that sciences talk about are physical events
  - Type physicalism: all the properties that sciences talk about are physical properties
  - Reductionism → token physicalism → generality of science
  - Fodor argues that reductionism is too strong a constraint on the unity of science, and that token physicalism suffices (and still implies the generality of physics)

The Philosophy of Social Science

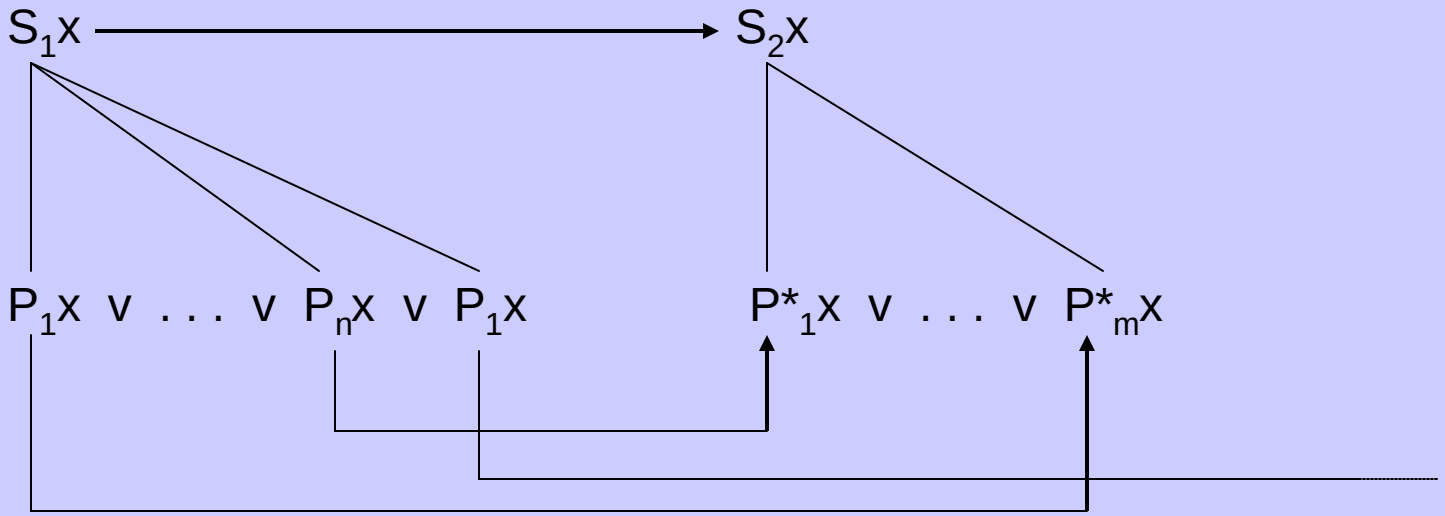
- Special Sciences
  - Classical reductionism:



    - where S_1, S_2, P_1 & P_2 are predicates picking out natural 'kinds' in their respective sciences
    - and the 'bridge laws' expressed by $\leftrightarrow$ are *event identities* (i.e, S_1x and P_1x are descriptions in their respective sciences of the *same* event, etc.)
  - Fodor rejects the idea of coextensive 'kinds' and the possibility of such bridge laws, and thus rejects classical reductionism

The Philosophy of Social Science

- Special Sciences
  - Fodor's reduction scheme:



    - The generalizations expressed by ------ are not *laws* as the disjunctive predicates do not identify natural physical kinds

The Philosophy of Social Science

- Special Sciences
  - Fodor's reduction scheme:
    - 'Laws' in the special sciences can now have exceptions
    - Physical laws, however, are still exceptionless
    - As the bridge statements are still token event identities, this model does still imply token physicalism (and thus the generality of physics)
    - The value of special sciences consist of their being able to express true generalizations (possibly with exceptions) that could only be expressed as vast open disjunctions under complicated conditions using the 'kinds' available in physics

Business Research

- Is the primary goal of Business Research explanation or prediction?
- Are these the only two important choices?
  - If so, why?
  - If not, what alternatives matter?

Theories, Hypotheses and Models

- What is a theory / what are theories?
- What is theory?
- What are hypotheses?
- What are models?
- What do we test empirically?
- How are they related?
- What is the scientific method?
- Bring to class next week a slide containing five instances of theories and / or models in your area

Some Questions to Ponder

- What is a scientific law?
- What makes it a *law*?
- Who or what should obey scientific laws, and why?
- Does social science have scientific laws too?
- Is “Time pressure causes auditors to make more mistaken decisions” a *law*?
- What is a cause?

Necessary Truths

- Hume's argument in a nutshell
  - Contingent truths are discovered by experience
  - Necessary truths are known *a priori* (from the beginning, not in virtue of what we experience)
  - Laws of nature are not, in fact, known *a priori*
  - So laws of nature cannot be necessary truths

Necessary Truths

- Distinguish what is known
  - A priori
  - A posteriori
- Distinguish
  - Analytic statements
  - Synthetic statements
- Can there be synthetic a priori truths?

Social Science Research

- What is research?
- What are the goals of research?
  - Understanding
  - Explaining
  - Predicting
  - Manipulating
  - Controlling

Social Science Research

- What is medical research?
- What are its goals?
- Do accounting firms conduct research?
- For what purpose?
- What is (academic) business research?
- What are its goals?

The Scientific Approach

- Science versus common sense:
  - Use of conceptual schemes and theoretical structures
  - Systematic empirical testing of theories and hypotheses
  - Control
  - Preoccupation with relationships
  - Ruling out metaphysical explanations
- Note Kerlinger's *positivist* attitude towards metaphysics!

The Scientific Approach

- Broad views of science
  - Static: adding to the body of facts, laws, theories, hypotheses and principles
  - Dynamic: an activity with a discovery emphasis
- Functions of science
  - A discipline aimed at improvement
  - The establishment of general laws and the connection of our knowledge of separate known events, to make reliable predictions of unknown events (Braithwaite)

The Scientific Approach

- Sampson's views
  - Conventional perspective
    - A mirror of nature, accurate description, with science as an objective referee
  - Sociohistorical
    - Science as a story, with no neutral arbitrator

The Scientific Approach

- ***The basic aim of science is theory***
- Theories are explanations of natural phenomena
- "A theory is a set of interrelated constructs (concepts), definitions, and propositions that represent a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena" (K&L, p.11)
- Theories are tentative explanations, evaluated empirically (K&L, p.13)

The Scientific Approach

- "Scientific research is systematic, controlled, empirical, amoral, public and critical investigation of natural phenomena. It is guided by theory and hypotheses about the presumed relations among such phenomena." (K&L, p.14)
- What we test is not variables, but the *relation* between variables.
- We do not usually test hypotheses *directly* – we test deduced implications of hypotheses.

Problems and Hypotheses

- A problem is an interrogative sentence or statement that asks: What relationship exists between two or more variables?
  - The problem should express a relation between two or more variables
  - It should be expressed clearly and unambiguously in question form
  - It must imply possibilities of empirical testing

Problems and Hypotheses

- A hypothesis is a conjectural statement of the relation between two or more variables
  - Hypotheses are statements about the relations between variables
  - Hypotheses carry clear implications for testing the stated relations
- Hypotheses are the working instruments of theory
- They can be tested and shown to be probably true or probably false
- They enable scientists to get outside themselves

Problems and Hypotheses

- Problems and hypotheses direct investigations
- They help an investigator confirm or disconfirm theory
- A hypothesis is never really proved or disproved
- Hypotheses should avoid *values* and *methodological problems*
- They should be neither too general nor too specific
- They are commonly multivariable (N.B. *not* multivariate!)

Problems and Hypotheses

- Hypotheses should be
  - Testable
  - In harmony with existing knowledge
  - Parsimonious
  - Relevant to the question of interest
  - Susceptible of quantification (?)
  - Able to yield a large number of consequences
  - Logically simple
  - General in scope

  (Wanda Wallace)

Problems and Hypotheses

- Null hypothesis
- Alternative hypothesis
- Alpha risk: risk of Type I errors
- Beta risk: risk of Type II errors
- Type I errors: incorrect rejection of true null
- Type II errors: incorrect acceptance of false null
- Type III errors: working on the wrong problem

Constructs, Variables and Definitions

- Concepts, Constructs and Variables
  - A *concept* expresses an abstraction formed by generalization from particulars
  - A *construct* is a concept with the added meaning of having been deliberately and consciously invented or adopted for a special scientific purpose
  - A *variable* is a symbol to which numerals or values are assigned

Constructs, Variables and Definitions

- A *constitutive* definition defines a construct using other constructs
- An *operational* definition assigns meaning to a construct or a variable by specifying the activities or operations necessary to measure it and evaluate the measurement
  - Measured
  - Experimental (manipulated)

Constructs, Variables and Definitions

- The objects studied in the physical sciences are typically presented to us in nature – they are in some sense objective
- Social sciences, however, investigate theories that use constructs we have devised ourselves; it is important that the constitutive and operational definitions of these constructs are consistent with each other, and also with the expression used to name them
- In particular, be wary of constructs defined or measured differently in different studies that appear to be about the same things, but may not always be so