

Title: Workshop: Philosophy of Science

Instructor(s): Christian Suhm

Contents:

1a) *What is philosophy of science?*

philosophy of science as 'science of science' and methodology of science

central notions in the philosophy of science: theory, hypothesis, observation, experiment, (empirical/experimental) confirmation, falsification, explanation, deduction, induction, inference to the best explanation, scientific law/law of nature, scientific progress, (approximate) truth, realism, constructivism

important and influential positions: empiricism/positivism (Carnap, van Fraassen), falsificationism (Popper, Lakatos), constructivism (Kuhn, Feyerabend, Goodman), scientific realism (Boyd)

1b) *Scientific realism*

ontological thesis: mind-independence of reality

epistemological thesis: possibility/actuality of knowledge about the reality, especially about unobservable (theoretical) entities

semantical thesis: scientific truth means correspondence between theories and facts

2a) *Theory, hypothesis, confirmation, falsification*

What is theory? What is a hypothesis?

How are theories and hypotheses confirmed/falsified?

deductive-nomological model of explanation (Hempel)

inductive-statistical model of explanation (Hempel)

2b) *(Problem of) Induction*

the problem of induction (Hume, Kant, Popper)

deduction vs. induction

falsificationism (Popper, Lakatos)

inference to the best explanation (Lipton)

3a) *Scientific progress*

What role plays the history of science for methodology?

theory-method dynamics (Boyd)

(approximate) truth (Niiniluoto)

Can scientific progress be construed as an approximation to truth?

relativism, constructivism (Kuhn, Goodman)

- 3b) *Arguments against scientific realism and approximation to truth*
 - empirical under-determination of theories (Duhem, van Fraassen)
 - pessimistic meta-induction (Laudan)
- 4a) *Philosophy of psychology*
 - universe of discourse: mental objects (thoughts, opinions, attitudes, experiences, impressions, emotions, and so on)
 - introspection, first-/third-person perspective, intersubjectivity
 - mind-body problem
 - qualia, what is it like to be?
- 4b) *Open discussion: psychological methodology*
 - psychology as a natural science
 - reduction of mental to physical entities
 - naturalism, naturalistic methodology

Assignment: Active participation, group work, discussions

Credit(s): 2 workshop days