MUNI
ECON

Základy filozofie

filozofie vědy

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HLAVNÍ OTÁZKA

Co je věda?

- Jak vymezit vědu?
- Zajišťuje nám věda lepší způsoby poznání?
- Jaký je postup vědeckého poznání?
- …

ÚVOD

potřeby pro rozlišení (demarkaci)

cf. Pigliucci and Boudry (2013), …

- praktické
  - politika/plánování
    např.: financování výzkumu
  - vzdělávání
    např.: kreacionismus a inteligentní desing vs. evoluční teorie
  - zdravotní péče
    např.: kmenové buňky
  - spravedlnost/soudy (expertní svědectví)
    např.: pyramid razor sharpener
  - …
- theoretical
  - material starting points
  - epistemological warrant
  - …

předběžné problémy

Co chceme odlišit?

- věda
- větve nebo obory vědy
- dobrá věda
- špatná věda
- pseudo-věda
- nevědeské oblasti
- paravěda
- různé systémy přesvědčení
- non-věda
- ...

Čeho chceme dosáhnout?

- deskripce
- preskripce

Co vezmeme do úvahy?

- teorie
- systémy/soubory propozic
- osoby
- praxi
- …

Je rozlišení/demarkace univerzální?

- čas/historie
- oblasti/obory/větve
- všeobecně

Je rozlišení/demarkace stálá/fixní?

- jednou věda/non-věda, stále věda/non-věda
- věda/non-věda se může změnit na non-věda/věda
- věda se může změnit na non-vědu
- non-věda se může změnit na vědu

Jak prakticky rozlišení/demarkaci provést?

- výzkum teorií
- empirické pozorování
- …

KARL RAIMUND POPPER

úvod

oblasti zájmu

Popper (2014: 34)

- Marx's theory of history
- Freud's psychoanalysis
- Adler's individual psychology
- Einstein's theory of relativity

"It began to dawn on me that this apparent strength was in fact their weakness."

problems of induction

two problems of induction

Popper (2005)

- psychological
  - Why do We Believe …
- logical
  - logical form
  - justification of induction

forms of theories

forms of statements

Popper (2005)

- singular statements
  - individual concept
- universal statements
  - numerically universal statements
  - strictly universal statements

forms of statements

Popper (2005)

- exitential statements
- non-existence statements

forms of theories

Popper (2005)

rigorous axiomatized system

- consistency
  - epistemological usefulness
- prohibiton
  - possibility of falsification

Fries's Trilemma

Popper (2005)

- psychologism
- infinite regress
- dogmatism

- version of dogmatism
  - no firm base
- observability

falsifiability

components

- theory
- initial conditions
- basic statements

problems & critique

problems & critique

- immunizations
- determination of theories
- missing empirical base
- not corresponding to scientiffic practise
  - Thick Skin Problem
    problém hroší kůže

Thick Skin of Scientists

Lakatos (1978: 5–4)

"Scientists have thick skins. They do not abandon a theory merely because facts contradict it. They normally either invent some rescue hypothesis to explain what they then call a mere anomaly or, if they cannot explain the anomaly, they ignore it, and direct their attention to other problems. Note that scientists talk about anomalies, recalcitrant instances, not refutations."

THOMAS SAMUEL KUHN

Struktura vědeckých revolucí// 1. edice

The Structure of Scientific Revolutions (1st edition)

Kuhn (1962)

- pre-paradigm period
- period of normal science
  - cumulative proces
  - dogmas
- period of non-normal science
  - period of extraordinary science
  - period of scientific revolution

kritika pojmu paradigma

The Nature of a paradigm

Masterman (1970)

- metaparadigms
- sociological paradigms
- artefact/construct paradigms

The Structure of Scientific Revolutions

Shapere (1964)

- “paradigms cannot, in general, be formulated adequately”
- “cannot be described adequately in words“

Struktura vědeckých revolucí// 2. a další edice

The Structure of Scientific Revolutions (other editions)

Kuhn (2012)

- symbolic generalizations
- models
- values
- exemplars
- ...

kritika výzkumných matic

Critique of the Paradigm Concept

Shapere (1971)

- We are unusre what is content of disciplinary matrix.

IMRE LAKATOS

typy falsifikace

- naivní
  - dogmatická
    - pevná empirická báze
  - metodologická
    - konvenční empirická báze
    - pasivisté vs. aktivisté
- sofistikovaná
  - pravidla falsifikace/eliminace
  - pravidla akceptace

výzkumné programy

strukturace výzkumných programů

sofistikovaná falsifikace

Lakatos (1978: 116)

„For the sophisticated falsificationist a scientific theory T is falsified if and only if another theory T' has been proposed with the following characteristics: (I) T' has excess empirical content over T: that is, it predicts novel facts, that is, facts improbable in the light of, or even forbidden, by T;3 (2) T' explains the previous success of T, that is, all the unrefuted content of T is included (within the limits of observational error) in the content of T'; and (3) some of the excess content of T' is corroborated.“

ODMÍTNUTÍ

The Demise of the Demarcation Problem

Laudan (1983)

"[…] we ought to drop terms like 'pseudo-science' and 'unscientific' from our vocabulary; they are just hollow phrases which do only emotive work for us."

"[…] The 'scientific' status of those claims is altogether irrelevant."

DOBRÁ VĚDA

Merton

Institutional Imperatives

Merton (1973)

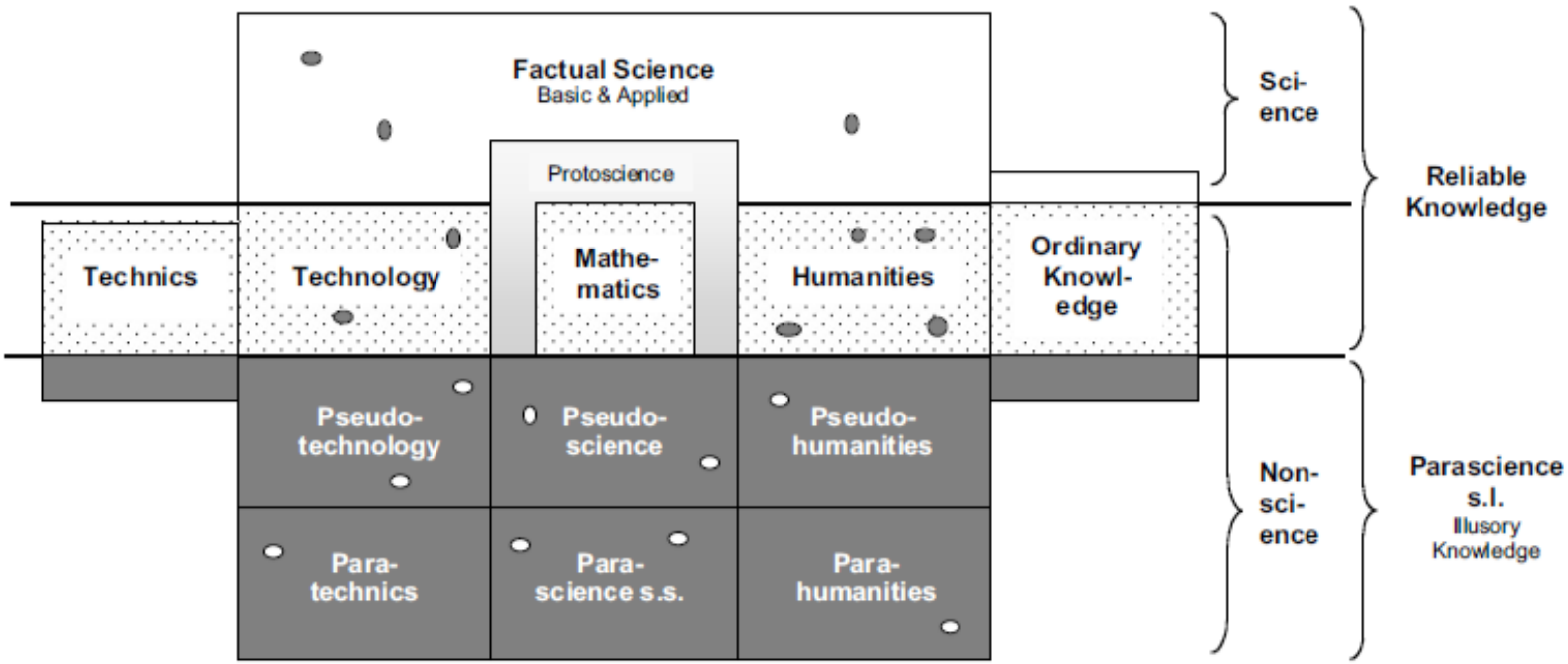
- Universalism
- “Communism”
- Disinterestedness
- Organized skepticism

EPISTÉMICKÉ OBLASTI/POLE

Bunge & Mahner

Structure of Epistemic Fields

Mahner (2007: 549)



Structure of Epistemic Fields

Mahner (2007)

1. Community C: the group or community C of knowers or knowledge seekers
2. Society S: the society S hosting the activities of C
3. Domain D: the domain or universe of discourse D of the members of C, i.e., the collection of factual or fictional objects the members of C refer to in their discourse
4. Philosophical background or general outlook G:
   (a) Ontological assumptions
   (b) Epistemological assumptions
   (c) Methodological principles
   (d) Semantic assumptions
   (e) Axiological and moral assumptions
      - Logical values
      - Semantical values
      - Methodological values
      - Attitudinal- and moral values
5. The formal background F: a collection of logical or mathematical assumptions or theories taken for granted in the process of inquiry

Structure of Epistemic Fields

Mahner (2007)

6. The specific background knowledge B:
   a collection of knowledge items (statements, procedures, methods, etc.) borrowed from other epistemic fields
7. The problematics P:
   the collection of problems concerning the nature, value or use of the members of D, as well as problems concerning other components listed here, such as G or F
8. The fund of knowledge K: the collection of knowledge items (propositions, theories, procedures, etc.) obtained by the previous and current members of C in the course of their cognitive activities
9. The aims A:
   the cognitive, practical or moral goals of the members of C in the pursuit of their specific activities
10. The methodics M:
    the collection of general and specific methods (or techniques) used by the members of C in their inquiry of the members of D

Structure of Epistemic Fields

Mahner (2007)

11. The systemicity condition:
    There is at least one other field of research S' such that S and S' share some items in G, F, B, K, A and M; and either the domain D of one of the two fields S and S' is included in that of the other, or each member of the domain of one of the fields is a component of a system in the domain of the other.
12. The changeability or progressiveness condition:
    The membership of the conditions 5–10 changes, however slowly and meanderingly at times, as a result of research in the same field or as a result of research in neighboring disciplines.

SHRNUTÍ A ZÁVĚR

Co si odnést?

Teorie potřebuje praxi.

důležité pojmy a koncepty I

POJMY A KONCEPTY

- dělení vědy
- problém indukce
- povaha tvrzení
  - existenciální, non-existenciální
  - singulární, universální
- empirická báze
- Friesovo trilema
- verifikace
- falsifikace
  - naivní, metodologická
- asymetrie verifikace a falsifikace
- ad-hoc hypotézy

důležité pojmy a koncepty II

- paradigma / disciplinární matice
- vědecká období
  - předparadigmatické období
  - období normální vědy
  - období ne-normální vědy
- výzkumný program
  - degenerativní a progresivní
  - tvrdé jádro, ochranný pás, heuristiky
- demarkace vědy
  - falsifikovatelnost
  - řešení hádanek
  - výzkumné programy

důležité pojmy a koncepty III

PROBLÉMY

- Jak lze rozlišit vědu a ne-vědu?
- Proč potřebujeme vědu?
- K čemu vede asymetrie mezi verifikací a falsifikací?

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