Logical empiricism / positivism

Key elements of a logical positivist / empiricist conception of science

- Motivations for post WW1 'scientific philosophy'
  - viscerally opposed to speculation / mere metaphysics / idealism
  - a normative demarcation project: to show why science is and should be epistemically authoritative
- Empiricist commitments
- Logicism

Some empiricist slogans

- Hume's 18th century book-burning passage
- Comte's mid-19th century rejection of speculation after first & final causes
- Duhem's late 19th/early 20th century slogan: 'save the phenomena'
- Hempel’s injunction against 'detours through the realm of unobservables'

Vienna Circle

So - what was the motivation for this 'revolutionary, uncompromising empiricism'? (Godfrey Smith, Ch. 2)

Why the 'massive intellectual housecleaning'? (Godfrey Smith)

Consider the context: World War I / the interwar period

Conflicts & Memories: The First World War

Maria Marchant

- Debussy: Berceuse héroïque, Élégie
  written war-time Paris (1914), heralds the ominous bugle call of war
- Rachmaninov: Études-Tableaux Op. 39, No 8, 5
  "some of the most impassioned, fervent work the composer wrote"
- Ireland: Rhapsody, London Nights, London Pieces
  a 'turbulent, virtuosic work…'
- Prokofiev: Visions Fugitives, Op. 22
  written just before he fled as a fugitive himself to the US (1917): military aggression & sardonic irony
- Ravel: Le Tombeau de Couperin
  each of six movements dedicated to a friend who died in the war

Key problem (1): logicism

- Are there, in fact, "rules" governing inference that are rational in the sense that they compel, will be endorsed by all: formal logic / probability theory as constitutive of rationality?
  A subsidiary worry are scientific theories systems of propositions, is logic the appropriate tool of analysis?
- And can the likely suspects do the job?
  Under-determination of (interesting/general) theories and hypotheses by (particular) observations
  = the limitations of deductivist models of confirmation / theory-evidence relations
Karl Popper

The honourable opposition

Deductive certainty only with falsification

‘If we are uncritical we shall always find what we want: we shall look for, and find, confirmations, and we shall look away from, and not see, whatever might be dangerous our pet theories.’

Lucinda Douglas Menzies

Does falsificationism solve the problem?

Consider falsification testing of the hypothesis ‘all swans are white’ OR ‘sore throats lead to colds’

- Are observations of counter-instances – particulars (or samples) that violate the expectations of the hypothesis – necessarily disconfirming?
- Are they as decisive as Popper thought/hoped?
- Why not?

Key problem (2): what exactly is the empirical ‘soil’?

- Holism: scaffolding and auxiliaries
- Theory-ladenness of observation
  - Does the ‘fact : theory’ distinction hold?
  - Is there a universal language of observation?
  - Can we avoid ‘detours through the realm of unobservables’ (Hempel’s ‘Theoretician’s Dilemma’)

Another key problem (3): facts vs values

Context of discovery

Context of justification

Context of application

Uses of argument: Toulmin schema

Uses of argument – in archaeology