The Big Picture

Thesis (Naturalism)

*Naturalism maintains that philosophical inquiry is continuous with scientific inquiry.*

(cf. Aristotle)

**Question:** what does this mean more precisely?

E.g. philosophy can use results from science to help answer **philosophical questions** even in the philosophy of science

⇒ **Circularity charge**: viciously circular to use scientific results to justify scientific practice...
Foundationalism

- scientific theories must first be put on a firm and secure foundation, which must be external to science

- once scientific practice is justified by such an external standpoint, it inherits the respectability of this standpoint

- Naturalism denies the existence of and the need for any such foundation, because description of knowledge and science no more certain than science itself.
Philosophy should not give foundation for scientific knowledge.

Epistemology should be absorbed by scientific psychology; only questions that can be answered by psychology are relevant.

Churchlands: neuroscience!
There are distinctly philosophical questions, although science contributes to their answers.

- science as resource for philosophy, not as its replacement
Examples of philosophical questions

- normative questions (involving value judgment) ⇒ ‘normative naturalism’

**Definition (Naturalistic fallacy)**

*(Alleged) fallacy of identifying an axiological (= pertaining to values) concept with a ‘natural’ concept.*

For our purposes, ‘natural’ concepts are those drawn from the special sciences.

**Definition (Hume’s law or the is-ought fallacy)**

*It is (allegedly) impermissible to derive a claim about what ought to be from statements of what is.*
**Question**: how can normative naturalism avoid these (alleged) fallacies?

**Answer**: normative judgments in epistemology are made in an instrumental way

⇒ an action is said to be instrumentally rational just in case it is a good (or promising) way of achieving the pursued goal

If an action $A$ is undertaken to achieve a goal $B$, it is a factual matter whether or not $A$ is conducive to the realization of $B$. 
2 relationship between commonsense view of world (‘manifest image’) and scientific picture of world (‘scientific image’)

2a naturalistic philosophy of mind: relationship between thoughts, beliefs, desires and mind in neuroscientific sense

3 relations between different sciences

*historically, philosophy has served as incubator for novel and speculative ideas, often engendering scientific inquiries*
Naturalistic philosophy of science should seek to achieve

1. General understanding of how humans gain knowledge about the world
2. Understanding of what privileges science as an epistemic endeavour
Challenge from sociology

Challenge: science is not genuinely responsive to world

Counter via distinction between ‘in principle’ and ‘in practice’

1. does nature of human thought/perception permit that scientific beliefs can be made responsive to world?

2. even if possible in principle, do actual scientific communities operate such that this responsiveness occurs in practice?
Theory-ladenness of observation

Thesis (Theory-ladenness of observation; Kuhn, Feyerabend)

“[O]bservation cannot function as an unbiased way of testing theories [or paradigms] because observational judgments are affected by the theoretical beliefs of the observer.” (Godfrey-Smith, p. 156)

Two issues

1. **Reliability**: is observation reliable way of acquiring faithful representations of the world; and if so, to what extent?

2. **Neutrality**: is observation neutral between competing theories and thus provides intersubjective basis for theory choice?
Four levels of theory-ladenness

1. **Guidance** of observation by theory: harmless

2. **Selection** of observation by theoretical background: more serious, ultimately needs theory of confirmation

3. **Language** of observation reports theory-laden because holistic meaning, two cases:
   
   a. either theories infecting language are low-level, not at stake
      \[ \Rightarrow \text{harmless} \]
   
   b. observation reports affected by theory being tested: but perhaps although theory provides concepts for observation reports, these reports might still spell trouble for theory

4. **experiences themselves** might be influenced by beliefs, theories
Café wall illusion
illusion is not affected by knowledge that it is an illusion
so observation may not be biased by whether a particular scientific theory is accepted or not
naturalist observation as natural phenomenon, to be studied by psychology, neuroscience etc
perceptual mechanisms might depend on low-level theories s.t. perception is reliable without low-level theories themselves being true
success of science originates from beneficial interaction between reward structure for individual and goals of science as whole (cf. ‘invisible hand’ structure, Kuhn)

science as combination of cooperation and competition

most relevant form of recognition: use (Merton: priority)

reward system of science operates in inherited context, particularly in system of cooperation and trust

scientists trade credit for support

scientific change as evolutionary process of variation and selection: ideas compete in a struggle for replication
Laudan, Lakatos: rational choices by individuals

but: what’s the optimal macro-distribution of resources?

not optimal: allocate all resources to most promising research program (RP), rather: ‘bet-hedging’

problem of decreasing marginal return: each additional worker makes less and less contribution to success of RP

Question: what kind of individual reward system will tend to produce the most beneficial macro-distribution of resources?
1. Give fixed reward to everyone working in the ultimately successful RP, independently of how many workers there are in this RP ⇒ all eggs in one basket, bad!

2. Reward only individuals in ultimately successful RP, but divide pie equally among all workers ⇒ reward of individual also depends on choices of others
   - much better because if RP is overcrowded, individuals have incentive to join alternative RP
   - problem (Strevens): may be most beneficial for individual to join promising RP without contributing much (would have contributed more in alternative RP)
     ⇒ ‘free-riding’ is encouraged

3. (Strevens) Allocate rewards to individuals proportional to their contribution to successful RP, i.e. pie is shared unequally among workers in successful RP