UCLouvain

FIAL
Un éventail de formations, une multitude d'horizons

Hanson and Feyerabend

LFILO2602 – Philosophy of Science
Session 2

N. R. Hanson (1924–1967)

Seeing and Perceiving

> Seeing is an experience. A retinal reaction is only a physical state—a photochemical excitation. Physiologists have not always appreciated the differences between experiences and physical states. People, not their eyes, see. (6)

Seeing and Seeing *As*

> Suppose that the only object to be seen is a certain lead cylinder. Both men see the same thing: namely this object—whatever it is. It is just here, however, that the difficulty arises, for while Tycho sees a mere pipe, Kepler will see a telescope, the instrument about which Galileo has written to him. (7)

Sense Data

Here the ‘formula’ re-enters: ‘These are different *interpretations* of what all observers see in common. Retinal reactions…are virtually identical; so too are our visual sense-data, since our drawings of what we see will have the same content. There is no place in the seeing for these differences, so they must lie in the interpretations put on what we see.’ (9)

Sense Data

> This sounds as if I do two things, not one, when I see boxes and bicycles. Do I put different interpretations on fig. 1 when I see it now as a box from below, now as a cube from above? I am aware of no such thing. […] Fig. 1 is simply seen now as a box from below, now as a cube from above; one does not first soak up an optical pattern and then clamp an interpretation on it. (9)

Organization

> Is the physicist doing more than just seeing? No; he does nothing over and above what the layman does when he sees an X-ray tube. What are you doing over and above reading these words? Are you interpreting marks on a page? When would this ever be a natural way of speaking? (16)

Complex Perception

> The infant and the layman can see: they are not blind. But they cannot see what the physicist sees; they are blind to what he sees. We may not hear that the oboe is out of tune, though this will be painfully obvious to the trained musician. (Who, incidentally, will not hear the tones and *interpret* them as being out of tune, but will simply hear the oboe to be out of tune. We simply see what time it is; the surgeon simply sees a wound to be septic…) (17)

Theory-Ladenness of Observation

> There is a sense, then, in which seeing is a 'theory-laden' undertaking. Observation of *x* is shaped by prior knowledge of *x*. Another influence on observation rests in the language or notation used to express what we know, and without which there would be little we could recognize as knowledge. (19)

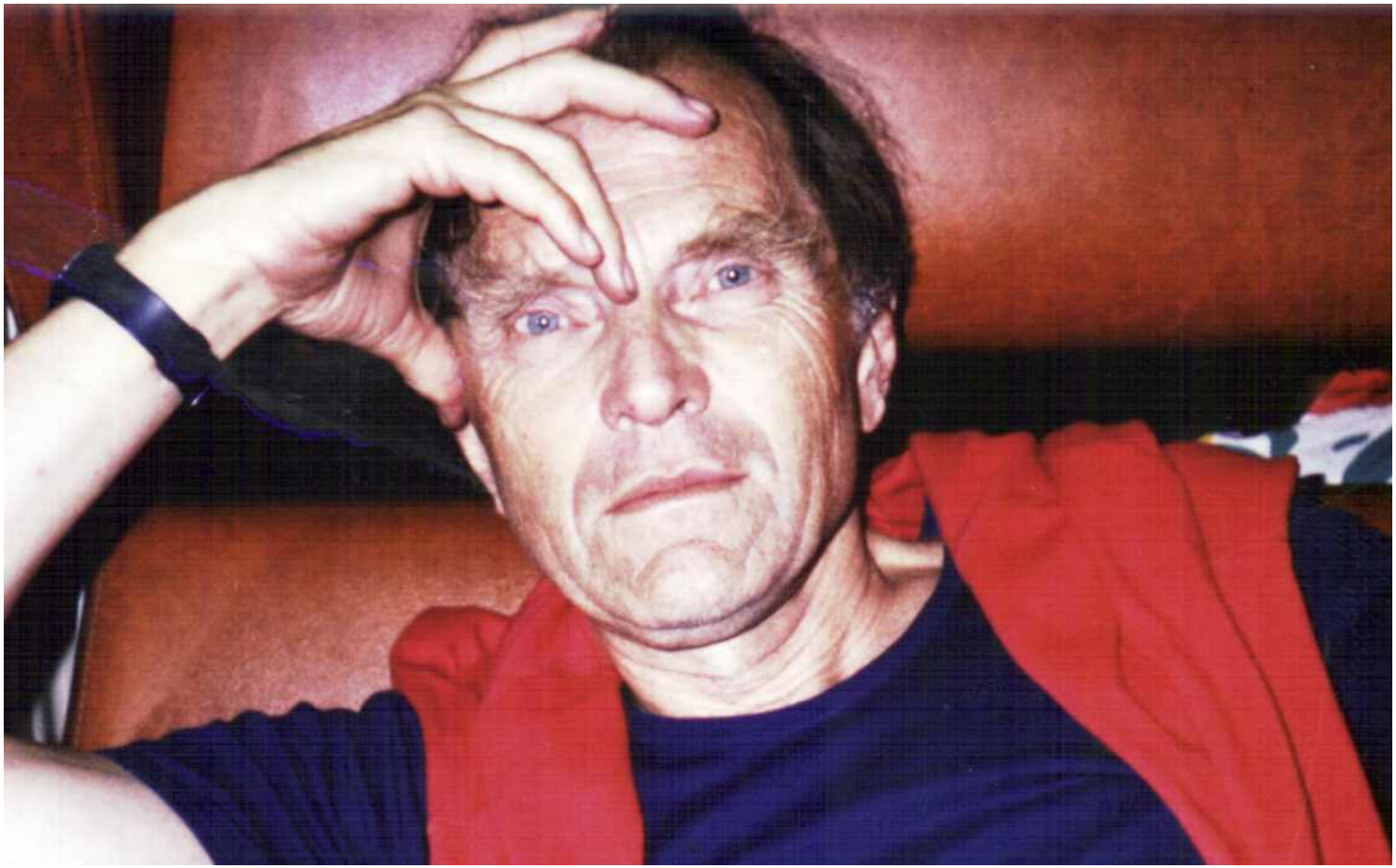
Theory-Ladenness of Observation

> Seeing an object *x* is to see that it may behave in the ways we know *x*'s do behave: if the object's behaviour does not accord with what we expect of *x*'s we may be blocked from seeing it as a straightforward *x* any longer. (22)

Theory-Ladenness of Observation

> …observation in physics is not an encouter with unfamiliar and unconnected flashes, sounds, and bumps, but rather a calculated meeting with these as flashes, sounds and bumps of a particular kind. (24)

Paul Feyerabend (1924–1994)



Against Method

> Moreover, there is not a single science, or other form of life that is useful, progressive as well as in agreement with logical demands. Every science contains theories which are inconsistent both with facts and with other theories and which reveal contradictions when analyzed in detail. (196)

Against Method

> Secondly, let us assume that the expressions ‘psychology,’ ‘anthropology,’ ‘history of science,’ ‘physics’ do not refer to facts and laws, but to certain *methods* of assembling facts including certain ways of connecting observation with theory and hypothesis.

Against Method

> Such an inquiry … will have to explore the ways in which scientists *actually* deal with their surroundings, it will have to examine the actual shape of their product, viz. 'knowledge', and the way in which this product changes as a result of decisions and actions in complex social and material conditions. In a word, such an inquiry will have to be anthropological. (196-7)

Against Method

> It has emerged that science is full of lacunae and contradictions, that ignorance, pigheadedness, reliance on prejudice, lying, far from impeding the forward march of knowledge may actually aid it and that the traditional virtues of precision, consistency ‘honesty’, respect for facts, maximum knowledge under given circumstances, if practiced with determination, may bring it to a standstill. (197)

Against Method

> Now a scientist engaged in a certain piece of research has not yet completed all the steps that lead to definite results. His future is still open. Will he follow the barren and illiterate logician who preaches to him about the virtues of clarity, consistency, experimental support (or experimental falsification), tightness of argument, 'honesty', and so on, or will he imitate his predecessors in his own field who advanced by breaking most of the rules logicians want to lay on him? (197)

Discussion

- How extreme is this, really?
- How destructive is this to the other things we've already discussed?
- For Feyerabend, what is the relationship between science, philosophy, and history?