Philosophical perspectives

Richard Feynman: *The Pleasure of Finding Things Out*, p146

The scientist has a lot of experience with ignorance and doubt and uncertainty, and this experience is of very great importance, I think. When a scientist doesn't know the answer to a problem, he is ignorant. When he has a hunch as to what the result is, he is uncertain. And when he is pretty damn sure of what the result is going to be, he is in some doubt.

Brödner, P. (1995). The Two Cultures in Engineering. In Goranzon, B. (Ed.), Skill, Technology and Enlightenment, Berlin: Springer-Verlag, 249-260.

Brödner, P. (1995). The Two Cultures in Engineering. (1)

One position, ... the *closed world* paradigm, suggests that all real-world phenomena, the properties and relations of its objects, can ultimately, and at least in principle, be transformed by human cognition into objectified, explicitly stated, propositional knowledge.

Brödner, P. (1995). The Two Cultures in Engineering. (2)

The counterposition,... the open development paradigm .. contests the completeness of this knowledge. In contrast, it assumes the primary existence of practical experience, a body of tacit knowledge grown with a person's acting in the world. This can be transformed into explicit theoretical knowledge under specific circumstances and to a principally limited extent only ...

Brödner, P. (1995). The Two Cultures in Engineering. (2)

Human interaction with the environment, thus, unfolds a dialectic of form and process through which practical experience is partly formalized and objectified as language, tools or machines i.e. form the use of which, in turn, produces new experience (i.e. process) as basis for further observation.

David Gooding: Experiment and the Making of Meaning, 1990

(as introduced by J.E.Tiles in his article Review: One Dimensional Experimental Science, in the British Journal for the Philosophy of Science, Vol. 45(1), 1994, 341-352)

David Gooding, Experiment and the Making of Meaning, 1990 (p. xi)

[*By treating science as consisting entirely of declarative knowledge embodied in representations,* philosophy in general] ... bifurcates the scientist's world into an empirical world of pre-articulate experience and know-how and another world of talk, thought and argument.

David Gooding, Experiment and the Making of Meaning, 1990 (p. xi)

Most received philosophies of science focus so exclusively on the literary world of representations that they cannot begin to address the philosophical problems that arise from the interaction of these worlds: empirical access as a a source of knowledge, meaning and reference, and, of course, realism.

William James
Essays in Radical Empiricism (1910)

See the appendix to Lecture 2 on Concurrency on CS405 website:
Empirical Modelling for the Single Agent

Principles of Radical Empiricism

Radical Empiricism consists in:

- a postulate
  the only things that shall be debatable among philosophers shall be things definable in terms drawn from experience
- a statement of fact
  the relations between things, conjunctive as well as disjunctive, are just as much matters of experience, neither more nor less so, than the things themselves
- a generalized conclusion
  the parts of experience hold together from next to next by relations that are themselves parts of experience. The directly apprehended universe needs, in short, no extraneous trans-empirical connective support, but possesses in its own right a concatenated and continuous structure.

Empirical Modelling in relation to Radical Empiricism

- modelling with definitive scripts is a means to creating conjunctive relations in experience
- conjunctive relations need not be of this nature (e.g. my aversion to tuna in puff pastry)
- by realising dependencies using observables that appear to be recognisable in an objective sense, EM contributes to communication between the private and the public