



PHILOSOPHERS AND KNOWLEDGE MANAGEMENT

Kant's two paths of knowledge creation: *a priori* vs *a posteriori*

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Where does knowledge come from? There are two main answers in modern philosophy, forming a kind of French tradition and a kind of British tradition respectively.

- The French tradition of *rationalism* follows Descartes (1596–1650) and his *deductive* method: 'All knowledge is derived by a deductive process similar to that in axiomatic geometry from this primitive and absolutely infallible truth' (Angeles, 1992, p. 157). Or as Russell (1961, p. 549) interprets Descartes: 'Knowledge of external things must be by the mind, not by the senses.'
- In contrast to the French rationalism is British *empiricism*, coined by John Locke (1632–1704), George Berkeley (1685–1753), David Hume (1711–1776) and others. According to Russell (1961, p. 589), Locke 'may be regarded as the founder of empiricism, which is the doctrine that all our knowledge ... is derived from experience.' Angeles (1992, p. 85) defined empiricism as 'the view that all ideas are abstractions formed by compounding ... what is experienced,' and: 'Experience is the sole source of knowledge,' and: 'All that we know is ultimately dependent on sense data.' He interprets Hume (p. 157) that 'all knowledge comes from ... *impressions*, the immediate, sensory, perceptual content of consciousness and ... *ideas*, the vague copies of these impressions that linger as content in our memory and imagination.'

The distance between the two schools can hardly be greater! Angeles (1992, p. 89) asks the crucial questions: 'What is knowledge? Is sense experience necessary for all types of knowledge? What part does reason play in knowledge? Is there knowledge derived only from reason?'

Immanuel Kant (1724–1804) provides us with a synthesis between the rational, deductive, French, Cartesian doctrine (the thesis) and the empirical, inductive, British process of knowledge creation (the antithesis). He distinguishes between *a priori* and *a posteriori* knowledge.

A priori knowledge 'derived from the function of reason without reference to sense experience' (Angeles, 1992, p. 159) does not depend upon sensual perception. For example, the knowledge *Any triangle has 180°* or *Any polygon with n nodes has (n-2)*180°* can be derived without empirical experience, that is *a priori*. Angeles (1992, p. 159) spells out three consequences: 'The truth of *a priori* knowledge (a) is not derived from sense experience, (b) cannot be checked against sense experience, and (c) cannot be refuted by any sense experience.'

In contrast, *a posteriori* knowledge is derived from sense experience. 'To know something *a posteriori* is to know it by experiencing it by one's senses as an aspect of the world, as something existing and found in reality' (Angeles, 1992, p. 158). 'In principle, the truth or falsity of *a posteriori* knowledge can be checked against sense experience. Since sense experience is relative, inconsistent, variable, and thus not fully reliable, however, *a posteriori* knowledge is not regarded as necessary or certain knowledge; it is rather probable knowledge that can be denied without pain of contradiction.'

The distinction between *a priori* and *a posteriori* knowledge is essential for any kind of knowledge management: (i) Which sections of the knowledge we deal with are solely based upon reason? (ii) Which sections of the knowledge we deal with are solely based upon empirical evidence? (iii) Which sections of the knowledge we deal with are based upon a combination of reason and empirical evidence?

Concerning (i): *A priori* knowledge is certain knowledge. It can be proven by logic, independent of sensation. Its understanding can be spread by logic or logical argumentation. Anybody who has understood the argumentation can reproduce the knowledge. There cannot exist counter-knowledge.

Concerning (ii): Management of empirical knowledge is different. The recipients have to develop an understanding of what has happened and what is going on – including the cause–effect relationships, that is the ups and downs of shares at the Stock Exchange, the growth of the IT industries, the economic strengths and weaknesses of nations, etc.

Concerning (iii): In many cases, *a priori* and *a posteriori* knowledge are closely interwoven. Three examples: (a) When Kepler (1571–1630) developed his laws of planetary motion, he depended upon empirical data

regarding the movement of Mercury, Venus, Earth, Mars, Jupiter, and Saturn, and discovered their general law of movement, expressed in mathematical equations, which formed the basis for calculating the movement of Uranus (discovered 1781), Neptune (1840), Pluto (1930) and man-made satellites; the *a priori* knowledge of ellipses merged with empirical data. (b) When James Watt (1736–1819) built his first steam engine in 1765, he depended much on empirical knowledge. It was Sadi Carnot (1796–1832) who contributed concepts of thermodynamic theory by deduction. Since then, advanced deduction and extended empirical experience became a unity of mutual stimulation of knowledge in thermodynamics. (c) In accounting, the schema of financial statements, that is balance sheet and profit-and-loss account, initiated by Luca Pacioli (ca. 1445–1514), was further extended by rational deduction, stimulated by empirical experience. The financial statements of any enterprise are empirical cases of the general schema.

In practice, it is not always easy to separate *a priori* and *a posteriori* knowledge, that is rationalism and empiricism. They seem to fertilise each other.

Knowledge management should deal with both *a priori* as well as *a posteriori* knowledge. A knowledge manager should be familiar with the distinction.

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