

the 1790s and beyond. Key caricaturists such as James Gillray, George and Isaac Cruickshank and Thomas Rowlandson, though not known as individual artists, produced large numbers of hand-coloured etchings on political events, sold to the public in print-shop windows and exhibitions. Typically such prints would contrast British freedoms, with a well-fed John Bull, against French liberty, with its vicious and starving *sans-culottes*. They demonstrated a fear of French democracy and popular movements at home, savagely caricaturing Whig leaders such as Charles James Fox and other contemporary reformers.

## Belief and thought

The canonical Romantic poets were building upon and reacting against the thought of their predecessors, sometimes breaking with the major trends or alternatively pushing that body of thought into more extreme positions than were usual in the Enlightenment. The writers and thinkers of the Enlightenment imagined themselves as emerging from centuries of darkness and ignorance into a new age enlightened by reason, science and a respect for humanity. The most celebrated exponent of this doctrine in the late seventeenth century was the British physician and philosopher John Locke. Locke's *Essay Concerning Human Understanding* (1690) laid the foundations of an Enlightenment theory of mind. Locke dismissed the notion of both neo-Platonists and Rationalists that there existed in the human mind certain innate or *a priori* ideas. He compared the human mind to a blank sheet of paper upon which experience writes, or to an empty cabinet which experience fills. The human mind is thus originally passive, and knowledge is arrived at by relating the ideas left in the mind by sensation. Locke distinguished two types of experience: sensation, the mind's perception of the world, and reflection, the mind's perception of its own operation. By reflecting upon simple ideas the mind is able to generate ideas. To account for this process, Locke developed the theory of the 'association of ideas', by which knowledge of an object is built up from the simple ideas of perception.

Immanuel Kant is said to have effected a 'Copernican revolution' in European thought and laid the foundations for the Romantic idealism of Coleridge, Thomas De Quincey and Thomas Carlyle in Britain. In his *Critique of Pure Reason* (1781) Kant argued by an exhaustive process of deduction that all knowledge derives from experience yet it is dependent on *a priori* or, in his terms, 'transcendental' structures in the mind, such as the concepts of space and time. For Kant, such concepts were present in the mind and not absolutes of experience. He was thus led to distinguish between that which is knowable, the representation of the object in the human mind, and that which is unknowable, the pure object or the 'thing-in-itself' (*Ding an sich*). As well as the concepts of space and time, Kant argued that notions of God, freedom and eternity were likewise part of the transcendent realm, unknowable in

themselves, but necessary for us to make sense of reality. The attraction of Kant's philosophy for Coleridge and the Romantics was that it assigned an active and creative role to the mind in the formation of human knowledge. Furthermore, Kant allowed an important role for the artistic imagination which had been somewhat restrained in the empiricist tradition. He distinguished between three kinds or powers of imagination. The first is the *reproductive imagination*, which is close to the Lockean mode of the association of ideas. The second is the *productive imagination*, which operates between sense perception and allows us to carry on the work of discursive reasoning. The third is the *aesthetic imagination*, which is free of the laws which govern the understanding and which works through symbols. Kant's threefold distinction corresponds to Coleridge's famous division of the powers of the mind in chapter XIII of *Biographia Literaria* into the *fancy*, the *primary imagination* and the *secondary imagination*.

The Romantic period likewise witnessed a transformation in ideas about science. In the eighteenth century, this body of thought and practices was known as 'natural philosophy', an enquiry into the powers and phenomena of the natural world, demonstrating the splendours of God's creation. By the end of the period the modern term 'scientist' had been coined (by William Whewell) and the notion of the scientist as a professional investigator of the natural world, working in a specialised discipline with institutional support and a network of colleagues, was accepted. The nineteenth century saw the divergence of knowledge into separate disciplines, supported by discrete associations and bodies with distinct and specialised agendas and instruments. The Royal Society, under the presidency of Sir Joseph Banks, conservatively continued to prefer applied science over theoretical questioning and resisted the creation of individual bodies such as the Linnean Society (1788), the Geological Society (1807), the Astronomical Society (1820) and the Zoological Society (1826). In 1831 the British Association for the Advancement of Science was formed with the intention of co-ordinating the work of the separate societies. The period witnessed many key developments in scientific discovery. There were major advances in the fields of mathematics, physics, chemistry, optics, electromagnetism and biology. Natural philosophy became a battle ground for conservatives and reformers. Joseph Priestley famously allied science with political reform when commenting that 'the English hierarchy (if there be anything unsound in its constitution) has equal reason to tremble even at an air pump, or an electrical machine'. Similarly, French science, especially chemistry, was anathematised by Edmund Burke as seditious.

In the field of the physical sciences unity of electricity, chemistry and magnetism was demonstrated. A 'chemical revolution' was under way, with the identification of new varieties of airs and the discovery of their different chemical properties. In the 1790s, John Dalton proposed that the proportions of gases mixed in the atmosphere depended on their 'atomic weights'. His insights led him to the atomic theory of matter for which he would be