calls naturalism and transcendentalism. The book is an exposition of this thesis and of its implications.

Lewis, Clarence I. *A Survey of Symbolic Logic.* Berkeley: University of California Press, 1918. Ch. 1, Sec. 7. This is still the best essay on Peirce's work in logic.

Moore, Edward C., and Richard S. Robin, eds. *Studies in the Philosophy of Charles Sanders Peirce, Second Series.* Amherst: University of Massachusetts Press, 1964.

Murphey, Murray G. *The Development of Peirce's Philosophy.* Cambridge, MA: Harvard University Press, 1961. An attempt to interpret Peirce's work chronologically and systematically through the architectonic principle.

Thompson, Manley. *The Pragmatic Philosophy of C. S. Peirce.* Chicago: University of Chicago Press, 1953. A thoughtful and systematic study of Peirce's pragmatism and related problems.

Weiss, Paul. "Charles Sanders Peirce." In *Dictionary of American Biography.* New York, 1934. Vol. XIV. A very fine biographical article on Peirce.

Wiener, Philip, and Frederic Harold Young, eds. *Studies in the Philosophy of Charles Sanders Peirce.* Cambridge, MA: Harvard University Press, 1952. This collection of essays on Peirce's philosophy is extremely uneven: it contains some excellent articles and some very poor ones. The papers by Savan, Thompson, Fisch and Cope, and Weiss are particularly good.

Murray G. Murphey (1967)

PEIRCE, CHARLES SANDERS [ADDENDUM]

Charles Sanders Peirce, one of America's most original philosophers, produced a body of work remarkable for its scope and enduring relevance. For many years Peirce's principal contributions to mainstream philosophy were in logic and philosophy of science, but changes in the philosophic terrain since 1967 have brought new areas of his thought to prominence. The resurgence of interest in pragmatism, due in large measure to its promotion by Richard Rorty, and the adoption of Peirce by the Frankfurt School as the philosopher who may hold the key to the problem of modernity, have brought attention to Peirce's unique brand of pragmatism and to his philosophy of signs. Outside of philosophy, the active interdisciplinary field of semiotics that began in Chicago with Charles Morris acknowledges Peirce as the founder of modern sign theory.

Peirce was a late child of the enlightenment, a staunch believer in the universal applicability of mathematics and in the continuous growth of knowledge through sustained inquiry. He was a diligent student of the history of science and understood that the advancement of knowledge is crucially linked to nondeductive (inductive and abductive) reasoning and shared experimental methods. He was convinced that a prerequisite for successful experimentation is an external world resistant to actions arising from misconceptions of it. These views led Peirce to an anti-Cartesian epistemology rooted in perceptual experience and committed to fallibilism and the repudiation of deductive foundationalism. Peirce generalized his view of the advancement of science to all forms of learning from experience, and he concluded that all meaningful conceptions are necessarily related to experiential expectations (conceived consequences). This is the epistemological motivation for his meaning-focused pragmatism (pragmaticism).

Sometimes Peirce is said to have equated truth with settled belief, but that applies only when belief is settled as the result of a steadfast application of scientific method. Other methods for overcoming doubt and settling belief, such as the a priori method or the methods of tenacity and authority, while not without some advantages, do not provide grounds for confidence that truth will be reached. Even the sustained application of scientific method can never issue in a guarantee that inquiry has "stormed the citadel of truth." Truth is always relative to propositions and is, therefore, grounded in the conventionality of symbolism (for propositions can only be expressed symbolically). The true represents the real precisely insofar as inquiry forces beliefs to yield to the dictates of an independent reality, but the "correspondence" of truth and reality that is hoped for at the end of inquiry is at best an ideal limit; we can never be certain that we have reached the truth. This is Peirce's fallibilism. It is typical of Peirce's philosophy that truth and reality are correlates in a triadic relation, where the mediating relate involves a community of inquirers (interpreters).

Peirce believed that the key to intelligence of any kind is sign action (which is always goal directed), and he formulated an elaborate semiotic theory to facilitate the analysis and classification of signs. Peirce's division of signs into icons, indexes, and symbols is his best-known semiotic bequest—although his distinction between tones, tokens, and types is also widely used—but these are only two of many triads that permeate his philosophy. Peirce held that minds are sign systems and thoughts are sign actions, and it is not too far-fetched to say that the mission of his semiotic is similar to that of modern-day cognitive science. Peirce's epistemological shift from a focus on ideas to signs marks him as a forerunner, if not a founder, of philosophy's so-called linguistic turn and, also, of the modern—and postmodern—emphasis on textualism. Peirce's triadic theory of signs distinguishes

semiotics from semiology, a generally dyadic theory of signs stemming from the work of Ferdinand de Saussure. Recently there have been attempts to reconcile these two approaches.

Current interest in Peirce's thought extends over most of philosophy. Peirce's graphical logic (his existential graphs) is used as a basis for computational linguistics. The recent move away from logicism has led to renewed interest in Peirce's philosophy of logic, according to which logic is not the epistemic foundation for mathematics. The rehabilitation of systematic and speculative thought has attracted attention to Peirce's evolutionary cosmology, which holds that the principal constituents of the universe are chance, law, and habit formation. Peirce insisted that change is really operative in nature (his tychism), that continuity, in general, prevails (his synechism), and that love or sympathy has a real influence on the course of events (his agapism). He contributed America's most original and thoroughgoing phenomenology (his phaneroscopy), and he advanced unique views on religion and on the significance of sentiment and instinct. He stressed the importance of the existent and the individual while, at the same time, admiring the ideal and insisting that rationality is rooted in the social. Peirce's intellectual legacy is a rich system of thought that helps organize and unify a broad array of issues in modern philosophy.

See also Chance; Classical Foundationalism; Cognitive Science; Enlightenment; Logic, History of; Philosophy of Science, History of; Pragmatism; Rorty, Richard; Truth.

Bibliography

WORKS BY PEIRCE

The New Elements of Mathematics by Charles S. Peirce, 4 vols. Edited by C. Eisele. The Hague: Mouton, 1976.

Complete Published Works Including Selected Secondary Material (microfiche edition). Edited by K. L. Ketner et al. Greenwich, CT, 1977. A companion bibliography is also available: *A Comprehensive Bibliography of the Published Works of Charles Sanders Peirce with a Bibliography of Secondary Studies.* Edited by K. L. Ketner. Greenwich, CT: Johnson Associates, 1977. Rev. ed., Bowling Green, OH, 1986.

Writings of Charles S. Peirce: A Chronological Edition. Edited by the Peirce Edition Project. Bloomington: Indiana University Press, 1982–.

Historical Perspectives on Peirce's Logic of Science: A History of Science, 2 vols. Edited by C. Eisele. New York: Mouton, 1985.

Reasoning and the Logic of Things: The Cambridge Conferences Lectures of 1898. Edited by K. L. Ketner. Cambridge, MA: Harvard University Press, 1992.

The Essential Peirce: Selected Philosophical Writings, 2 vols. Edited by N. Houser and C. Kloesel. Bloomington: Indiana University Press, 1992–1998.

WORKS ON PEIRCE

Apel, K.-O. *Charles S. Peirce: From Pragmatism to Pragmaticism.* Translated by J. M. Krois. Amherst: University of Massachusetts Press, 1981.

Brent, J. *Charles Sanders Peirce: A Life.* Bloomington: Indiana University Press, 1993.

Burch, R. W. *A Peircean Reduction Thesis.* Lubbock: Texas Tech University Press, 1991.

Delaney, C. F. *Science, Knowledge, and Mind: A Study in the Philosophy of C. S. Peirce.* Notre Dame, IN: University of Notre Dame Press, 1993.

Eisele, C. *Studies in the Scientific and Mathematical Philosophy of Charles S. Peirce.* Edited by R. M. Martin. The Hague, 1979.

Esposito, J. L. *Evolutionary Metaphysics: The Development of Peirce's Theory of Categories.* Athens: Ohio University Press, 1980.

Fisch, M. H. *Peirce, Semeiotic, and Pragmatism.* Edited by K. L. Ketner and C. J. W. Kloesel. Bloomington: Indiana University Press, 1986.

Freeman, E., ed. *The Relevance of Charles Peirce.* La Salle, IL: Hegeler Institute, 1983.

Hausman, C. R. *Charles S. Peirce's Evolutionary Philosophy.* Cambridge, U.K.: Cambridge University Press, 1993.

Hookway, C. *Peirce.* London: Routledge and Kegan Paul, 1985.

Houser, N., D. D. Roberts, and J. Van Evra, eds. *Studies in the Logic of Charles S. Peirce.* Bloomington: Indiana University Press, 1996.

Ketner, K. L., ed. *Peirce and Contemporary Thought: Philosophical Inquiries.* New York: Fordham University Press, 1995.

Murphey, M. G. *The Development of Peirce's Philosophy.* Cambridge, MA: Harvard University Press, 1961.

Raposa, M. L. *Peirce's Philosophy of Religion.* Bloomington: Indiana University Press, 1989.

Roberts, D. D. *The Existential Graphs of Charles S. Peirce.* The Hague: Mouton, 1973.

Nathan Houser (1996)

PELAGIUS AND PELAGIANISM

Pelagius was a spiritual adviser to Christian aristocrats in Rome around the turn of the fifth century CE. In a commentary on the Pauline epistles, a treatise *On Nature*, and other writings, he sought to bolster Christian asceticism by opposing Manichaean determinism and affirming human capacity to progress toward moral perfection. His moral character and theological insights attracted followers who defended and developed his teachings.