

## George Berkeley

Anglo-Irish empiricist philosopher, advocate of theological idealism, and clergyman **George Berkeley** (March 12, 1685 – January 14, 1753) was born in County Kilkenny. After spending several years at Kilkenny College, Berkeley entered Trinity College, Dublin where he studied divinity and received a B.A. in 1704. For the next three years, he studied privately and in 1707 was awarded an M.A. and elected a Junior Fellow of Trinity College, where he lectured in Greek, Hebrew and Divinity. That same year he published two short mathematical tracts. Berkeley was ordained a deacon in 1709 and published *An Essay toward a New Vision*. In 1710, he took holy orders and published *Discourse on Passive Obedience*.



In 1713 Berkeley was presented to the English court by Jonathon Swift and quickly became a favorite. His publication that year was the famous *Three Dialogues Between Hylas and Philonous*, a popularized and lively account of his theory of idealism. Theological idealism maintains that humans live, move and have being in that which, for lack of any helpful name, is called God. Berkeley argued that no existence is conceivable (and therefore not possible) that is not either conscious spirit or the ideas (i.e. objects) of which such spirit is conscious. For the next two decades Berkeley assumed various positions as a tutor, chaplain and Dean, and continued his writing. In 1728, he married Anne Forster, the daughter of a former Speaker of the Irish House of Commons.

At considerable personal sacrifice, Berkeley organized a movement to establish a college in the Bermudas for colonists and the indigenous peoples. His Bermuda project was presented in 1725 as *A Proposal for the better supplying of Churches in our foreign plantations and for converting the savage Americans to Christianity*. He spent 1728 to 1731 in Rhode Island awaiting a grant of 20,000 pounds promised by the English government for the project. When he learned the grant was not forthcoming, he returned to England. He was appointed Anglican bishop at Cloyne in Ireland in 1734, where he devoted himself to bettering the social and economic conditions of the country. He retired to Oxford in 1752 with his family and died on January 14, 1753 while listening to his wife read from the Bible.

Berkeley is best known among mathematicians for *The Analyst: or a Discourse Addressed to an Infidel Mathematician* (1734), a critique of the principles of the calculus. In it, Berkeley attacked the doctrine of abstract ideas and the mechanical philosophy of René Descartes, John Locke, Robert Boyle, and Isaac Newton, which he considered to be dangerous and would lead to freethinking. The infidel in the title is believed to have been Edmund Halley. Berkeley was upset because Halley had persuaded a mutual friend that Christianity was a myth. In *The Analyst*, Berkeley argued that the foundations of the calculus were no more secure than were those of religion. He did not reject the results of calculus, which he considered to be true, but rather felt its foundations were unsteady. His criticisms were well founded and caused an assortment of fine mathematicians to roll up their sleeves and go to work to bring order and rigor to the calculus.

The city of Berkeley in California is named for Bishop Berkeley. The following is a statement from the Visitors Guide for the City of Berkeley.

“On a typically clear May morning in 1866, the trustees of the College of California gathered on a hillside overlooking the bay. Below them was the rough-and-tumble port settlement of Ocean View; surrounding them were 200,000 acres of clear land that would someday become the University of California.”

One of the trustees quoted from a verse written by Berkeley: “Westward the course of empire.” Moved by the moment, the trustees agreed to name the town that was to house the university after the bishop. Berkeley’s name was also given to Yale’s Divinity School, founded in 1854, and Berkeley College built in 1934. Yale honored Berkeley because he had donated land and books to the college shortly after its 1701 founding.

To be a reputable critic of mathematics one should know quite a bit of mathematics. Mathematical critics are not those who claim that they can’t see any value in the subject. Nor are critics of mathematics those who confess quite contritely that they were never any good at mathematics and could never even balance their checkbooks. True mathematical critics are usually mathematicians themselves. They demand that new mathematical ideas be presented, if not with a totally secure foundation, at least with the probability that someone will eventually be able to supply it. Some mathematicians are able to make great leaps in discovering new ideas, but there will always need to be other mathematicians who fill in the gaps that geniuses have passed over. Even though established mathematics must flow smoothly, this is not how it develops naturally. W.S. Anglin in “Mathematics and History,” *The Mathematical Intelligencer*, 4, 1982, puts it as follows:

“Mathematics is not a careful march down a well-lighted highway, but

a journey into a strange wilderness where the explorers often get lost.”

**Quotation of the Day:** “And what are these fluxions? The velocities of evanescent increments. And what are these evanescent increments? They are neither finite quantities, nor quantities infinitely small, nor yet nothing. May we call them ghosts of departed quantities? ... He who can digest a second and third fluxion, a second or third difference, need not, methinks, be squeamish about any point in Divinity.” – George Berkeley