

Bishop Berkeley on Calculus in 1734

The Analyst, subtitled "A DISCOURSE Addressed to an Infidel MATHEMATICIAN. WHEREIN It is examined whether the Object, Principles, and Inferences of the modern Analysis are more distinctly conceived, or more evidently deduced, than Religious Mysteries and Points of Faith", is a book published by George Berkeley in 1734. The "infidel mathematician" is believed to have been Edmond Halley, though others have speculated Sir Isaac Newton was intended. See (Burton 1997, 477).

The Analyst was a direct attack on the foundations of calculus, specifically on Newton's notion of fluxions and on Leibniz's notion of infinitesimal change. In section 16, Berkeley criticizes

...the fallacious way of proceeding to a certain Point on the Supposition of an Increment, and then at once shifting your Supposition to that of no Increment . . . Since if this second Supposition had been made before the common Division by o , all had vanished at once, and you must have got nothing by your Supposition. Whereas by this Artifice of first dividing, and then changing your Supposition, you retain 1 and nx^{n-1} . But, notwithstanding all this address to cover it, the fallacy is still the same.

Its most frequently quoted passage:

And what are these Fluxions? The Velocities of evanescent Increments? And what are these same evanescent Increments? They are neither finite Quantities nor Quantities infinitely small, nor yet nothing. May we not call them the ghosts of departed quantities?