

BERNARD NIEUWENTIJT
1654-1718

Bernard Nieuwentijt was born on 10 August 1654, the son of a reformed minister in the small town of Westgraftdijk (province of Holland). In early 1675 he went to Leiden to study medicine, but later that year he moved to Utrecht, where he studied both medicine and law. Both at Leiden and Utrecht Nieuwentijt favored the new Cartesian philosophy. In February 1676 he defended his medical thesis *De obstructionibus*, which was clearly inspired by the Cartesian theory of matter. After obtaining his degree, Nieuwentijt settled as a medical practitioner in Westgraftdijk. He acquired a great reputation in his profession and as a result was appointed town physician of nearby Purmerend in 1682. There, he married Eva Moens, the (probably) well-to-do widow of a naval captain, in 1684 and was elected to the city council that same year. Nieuwentijt was elected burgomaster of this town nine times, beginning in 1702. He married for the second time in March 1699, to Elisabeth Lams, the daughter of a burgomaster of nearby Wormer (she died three months later).

By that time Nieuwentijt had acquired a reputation as a critic of the new calculus as put forward by Leibniz. In 1694 he had published his *Considerationes* on Leibniz's interpretation of the new mathematical methods, which in 1696 was followed by his *Considerationes secundae*. But long before Nieuwentijt had come across some of the publications of Leibniz, he had developed his own approach to infinitesimals. He published the lessons in infinitesimal calculus he had given to his stepson in 1695 as *Analysis infinitorum*, the first comprehensive textbook in this field. Although by the time of its publication the work had already been overtaken by further developments in mathematics, in its attention to the foundations of the new mathematical methods it clearly distinguished itself from other textbooks.

After an interval of some years, Nieuwentijt, who had by now abandoned the Cartesian philosophy, again entered the field of science. In 1715 he published a voluminous handbook on physico-theology, *Het regt gebruik der wereltbeschouwingen* (The Right Use of the Contemplation of the World), which was the first substantial Dutch contribution to this new genre. In this book, explicitly intended as a rebuttal of atheism, that is Spinozism, Nieuwentijt demonstrated the order, harmony and providence in nature, and these, according to him, proved the existence of an omnipotent and benevolent God. In

Nieuwentijt's view, modern science was totally in accordance with biblical revelation and by proving this he hoped to steer a middle course between anti-scientific orthodox Protestantism and radical, and potentially politically subversive, atheism. In his argumentation, Nieuwentijt did not use rationalistic arguments but drew heavily on the experimental evidence of modern science. In part he leaned on the work of others, but he also cited evidence acquired in a small 'college' for experimental natural philosophy set up by himself and some other prosperous burgers of Purmerend in the 1690s. *Het regt gebruik* became extremely popular. The book was reprinted several times and translated into French, English and German. In Holland, the book contributed considerably to the popularity of experimental natural philosophy.

Nieuwentijt died on 30 May 1718, but two years after his death another refutation of atheism, specifically Spinozism, was published: his *Gronden van zekerheid*. In this more methodical book, Nieuwentijt distinguished between the certainty provided by the senses (in natural science) and by purely deductive reasoning. He argued that so-called mathematical reasoning as practised by Spinoza was mere speculation and did not lead to certain knowledge, whereas his own empirical approach did lead to certain and (in the contemporary sense) mathematical knowledge.

Primary works

Disputatio medica inauguralis de obstructionibus (Utrecht, 1676); *Considerationes circa analyseos ad quantitates infinite parvas applicatae principia, et calculi differentialis usum in resolvendis problematibus geometricis* (Amsterdam, 1694); *Analysis infinitorum, seu curvilinearum proprietates ex polygonorum natura deductae* (Amsterdam, 1695); *Considerationes secundae circa calculi differentialis principia; et responsio ad virum nobilissimum C.G. Leibnitium* (Amsterdam, 1696); 'Traité sur un nouvel usage des tables de sinus et des tangentes au moyen de s'en servir sans qu'il soit nécessaire de multiplier et de diviser', in: *Journal littéraire* 1714, 166-174; *Het regt gebruik der wereltbeschouwingen, ter overtuiging van ongodisten en ongelovigen* (Amsterdam, 1714); *The Religious Philosopher, or the Right Use of Contemplating the Works of the Creator*, trans. J. Chamberlayne, 3 vols (London, 1718); *Gronden van zekerheid of de regte betoogwyze der wiskundigen, so in het denkkeeldige als in het zakelijke: ter weerlegging van Spinosaas denkkeeldig samen-*

stel; en ter aanleiding van eene sekere sakelyke wijsbegeerte (Amsterdam, 1720); *L'existence de Dieu démontré par les merveilles de la nature*, trans. P. Noguez (Paris, 1725); *Rechter Gebrauch der Weltbetrachtung zur Erkenntnis der Macht, Weisheit und Güte Gottes, auch Ueberzeugung der Atheisten und Ungläubigen*, trans. J.A. von Segner (Jena, 1747); *Een zekere, zakelyke wijsbegeerte*. Uitgegeven, ingeleid en van aantekeningen voorzien door R.H. Vermij (Amsterdam, 1988).

Secondary sources

A.J.J. van der Velde, 'Bijdrage tot de bio-bibliographie van Bernard Nieuwentyt (1654-1718)', *Bijdragen en mededelingen van de Koninklijke Vlaamsche Academie van Taal- en Letterkunde* (1926), 709-718; E.W. Beth, 'Nieuwentyt's significance for the philosophy of science', *Synthese* 9 (1955) 447-453; H. Freudenthal, 'Nieuwentijt und der teleologische Gottesbeweis', *Synthese* 9 (1955) 454-464; J. Vercruysse, 'La fortune de Bernard Nieuwentijt en France au XVIIIe siècle et les notes marginales de Voltaire', *Studies on Voltaire and the eighteenth century* 30 (1964); J. Bots, *Tussen Descartes en Darwin. Geloof en natuurwetenschap in de achttiende eeuw in Nederland* (Assen, 1972); B.P. Vermeulen, 'Nieuwentijts controverse met Leibniz', *Algemeen Nederlands tijdschrift voor wijsbegeerte* 75 (1983) 88-94; R.H. Vermij, 'Inleiding', in Bernard Nieuwentijt, *Een zekere, zakelyke wijsbegeerte* (see above), 13-39; R.H. Vermij, *Secularisering en natuurwetenschap in de zeventiende en achttiende eeuw: Bernard Nieuwentijt* (Amsterdam: Rodopi, 1991); J. Broeckman, 'God als almachtige horlogemaker. Over Bernard Nieuwentijts natuurtheologie', *Tijdschrift voor ecologische geschiedenis* 2 (1997) 11-17. H. Freudenthal in: *DSB*, vol. 10, 120-121; C. de Waard, in: *NNBW*, vol. 6, 1062-1063.

[K.v.B.]