

Joseph W. Dauben, "Georg Cantor y el Papa León XIII: Las matemáticas, la teología y el infinito," *Mathesis*, 6 (1990), pp. 46-74.

Reviewed by

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The English original of this paper appeared in 1977 in the *Journal of the History of Ideas*, 38, pp. 85-108, under the title "Georg Cantor and Pope Leo XIII: Mathematics, Theology, and the Infinite." The paper discusses Cantor's endeavour to show that his ideas were not incompatible with Catholic dogma and thus keep his theory of transfinite numbers out of the reach of Catholic criticism.

Here Professor Dauben presents two aspects of Cantor's personality which account for the progressive agreement between his views and those of certain Catholic thinkers of his time in the spirit of Pope Leo XIII's encyclical *Aeterni Patris*. One of them is Cantor's belief in the freedom of mathematics. Cantor's concept of actual infinite and his theory of transfinite numbers were the target of bitter attacks by his fellow mathematicians and he was therefore very much concerned to avoid any repetition of this from the influential Catholic theologians. Cantor thought that mathematics should not be held back by any kind of constraint arising out of mathematics itself. Neither Philosophy nor Theology had, in his opinion, anything to say about the truth and correctness of a mathematical theory. Mathematics has its own mechanism to avoid error and so its freedom is not a threat to the discipline although any external contention might be very harmful indeed. Cantor's ideas on the existence of mathematical objects are treated in paragraph 8 of his work *Grundlagen einer allgemeinen Mannigfaltigkeitslehre* (1883) in which he distinguishes between *immanent* and *transsubjective* reality and also in a footnote in which he explains the process which a newly-defined notion must undergo to be accepted as a suitable mathematical notion referring to an existent entity.

The second aspect of Cantor's personality is his deep-rooted religious feelings. Admittedly, disheartened as he was by the treatment he and his