Absolute Infinity, Knowledge, and Divinity in the Thought of Cusanus and Cantor

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Renaissance philosopher, mathematician, and theologian Nicholas of Cusa (1401-1464) said that there is no proportion between the finite mind and the infinite. He is fond of saying reason cannot fully comprehend the infinite. That our best hope for attaining a vision and understanding of infinite things is by mathematics and by the use of contemplating symbols, which help us grasp "the absolute infinite". By the late 19th century, there is a decisive intervention in mathematics and its philosophy: the philosophical mathematician Georg Cantor (1845-1918) says that between the realm of the finite and the absolute infinite, there is an intermediate realm partaking in properties in a certain sense of both the finite and the infinite: the transfinite realm. Like the finite, the transfinite realm is a realm of mathematical objects, numbers, and knowledge. Like the absolute infinite, the transfinite is a form of infinity insofar as transfinite sets and numbers transcend any finite number. Echoing Cusanus and neo-Platonism, Cantor says that the transfinite sequence of all ordinals is a symbol of the absolutely infinite, that is, God. Moreover, Cantor envisioned his transfinite set theory (*Mengenlehre*) as providing the analytical methods and techniques necessary for a comprehensive, organic, non-reductive description of nature, a *Naturphilosophie*. Thus Cantor's novel mathematics is presented as part of a long tradition, to which Cusanus, Bruno, Spinoza, Leibniz and others belong, in which the infinity and infinite character of organic life forms is appreciated, and is in some sense a mirror or symbol of the divine. The doctrine of symbolism and the different commitments to the laws of logic present in both the work of Cusanus and Cantor enables these thinkers to articulate a transcendental apophatic approach to divinity.

Introduction

What is the relationship between infinity and divinity, if any? Traditionally infinity was held to be a divine attribute, a property of the *ens realissimum*, the most perfect Being. Such a conception is present in Anselm's designation of God as 'that than which nothing greater can be conceived'. Similarly, God has been described as 'the Absolute Maximum', 'that than which there cannot be anything greater' and 'beyond all we can conceive', which as 'all that can be' is 'altogether actual'.[1] This conception breaks classical logic with its insistence on both the completeness and infinity of divine being. For if divine being is complete, how can it be infinite? And if divine being is infinite, how is it complete? One way out of the impasse is to separate the metaphysical, theological notion of completeness from the mathematical notion of infinity.

In this comparative essay, I focus on the thought of two German-speaking thinkers whose work spans the disciplines of mathematics, philosophy, and theology, and whose contribution to debates about infinity and divinity have been utterly seminal: the 15th century Cardinal Nicholas of Cusa (Nikolaos

[1] Nicholas of Cusa, *On Learned Ignorance* (*De Docta Ignorantia*), translated by Jasper Hopkins, Banner Press, Minneapolis, DDI Book I, ch.4, p.53.