

Talk for the Oxford Philosophy of Mathematics Seminar on 6 March 2017 by Donald Gillies, University College London  
([donald.gillies@ucl.ac.uk](mailto:donald.gillies@ucl.ac.uk))

**Title** An Aristotelian Approach for Contemporary Mathematics

**Abstract**

I will begin the talk with a brief sketch of Aristotle's original philosophy of mathematics. This, I will argue, is based on two postulates. The first is the embodiment postulate, which states that mathematical objects do exist, though not in a separate Platonic world, but embodied in the material world. The second is that infinity is always potential and never actual. I will then consider the extent to which this Aristotelian approach holds for contemporary mathematics. I will assume that most contemporary mathematicians accept ZFC. This rules out Aristotle's second postulate since ZFC's axiom of infinity implies the existence of an actual infinity. However, I will claim that the embodiment postulate can still be defended for contemporary mathematics. At first sight this seems a curious claim since Cantor's theory of transfinite alephs can be developed within ZFC, and surely transfinite alephs are not embodied in the material world. I will discuss this difficulty at length, and try to overcome it using ideas from Fictionalist and If ..then-ist philosophies of mathematics.