

Review of: "The Fallacy in the Paradox of Achilles and the Tortoise"

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The article is correct as far as it goes. I think some historical context would improve the paper. At least by the time of Aristotle, Greek philosophers didn't accept the concept of an actual infinity, but they did think about and work with potential infinities. From the point of view of not accepting actual infinities, Zeno's paradox remains a paradox--it can't be resolved (even though Aristotle makes it sound like he resolved it). We don't have explicit discussion of this concept from before Aristotle as far as I know. Given the way Zeno stated his paradox, I think it is reasonable to think he also didn't accept actual infinities.

The concept of a limit in calculus as it is naively presented slides over the distinction between potential and actual infinity. It was well into the nineteenth century before mathematicians had a careful understanding of the real line, along with the axioms needed to justify calculus.

So, I think a contemporary article seeking to resolve Zeno's paradox should carefully lay out the assumptions needed to put the intuitive notion of a limit on firm philosophical ground. Otherwise, the argument using an infinite sequence is not doing much more than telling us more precisely when Achilles catches up with the tortoise, not why the argument is wrong.