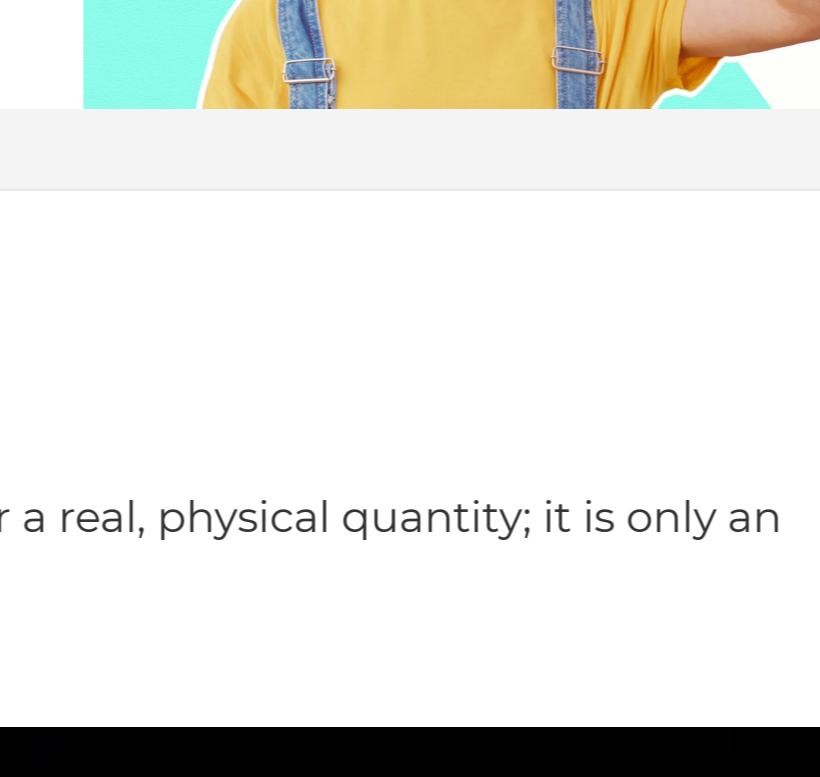


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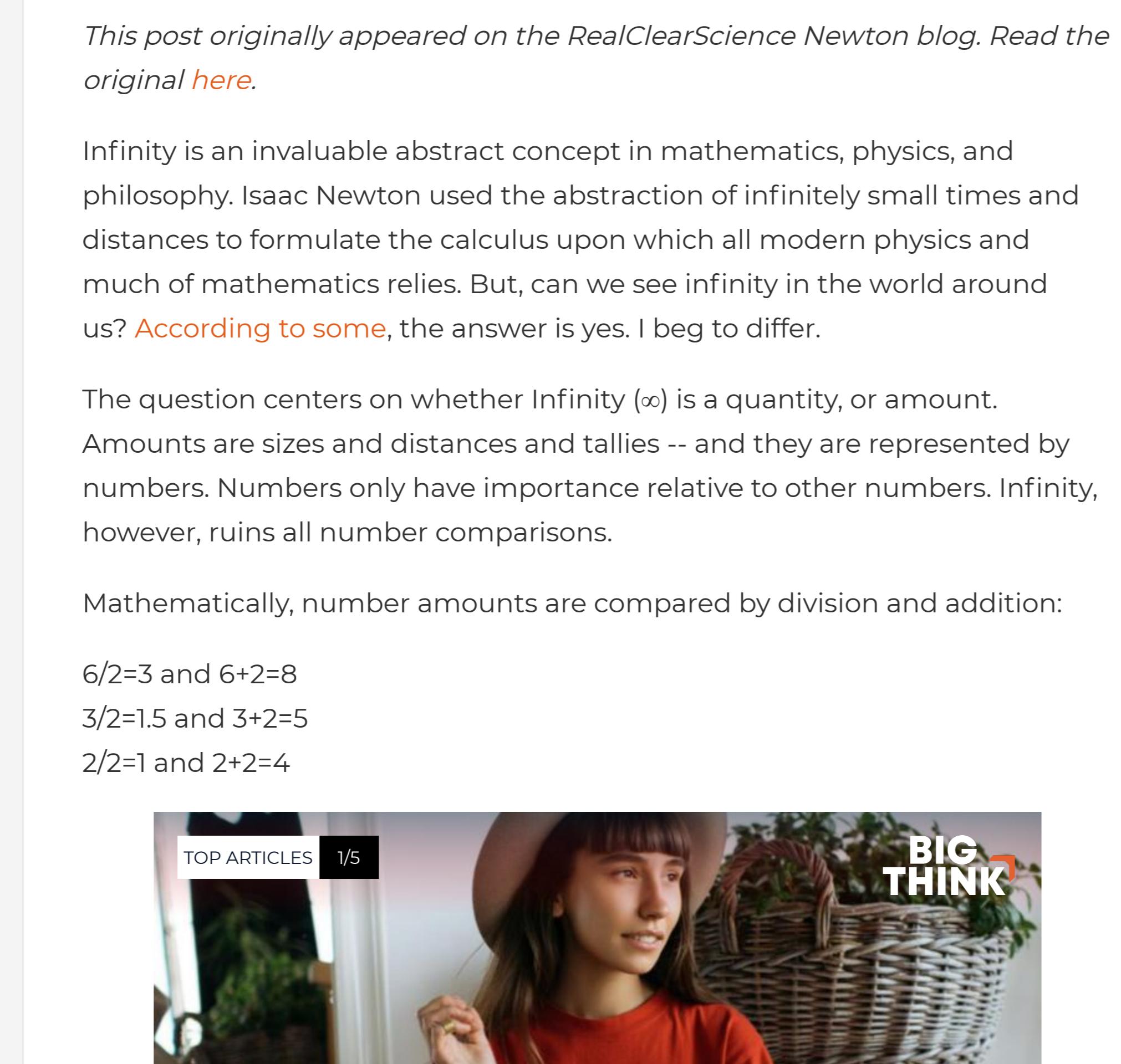
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## Infinity is Not Real

In our material, measurable world, infinity is never a real, physical quantity; it is only an abstraction.

TOM HARTSFIELD 07 August, 2013



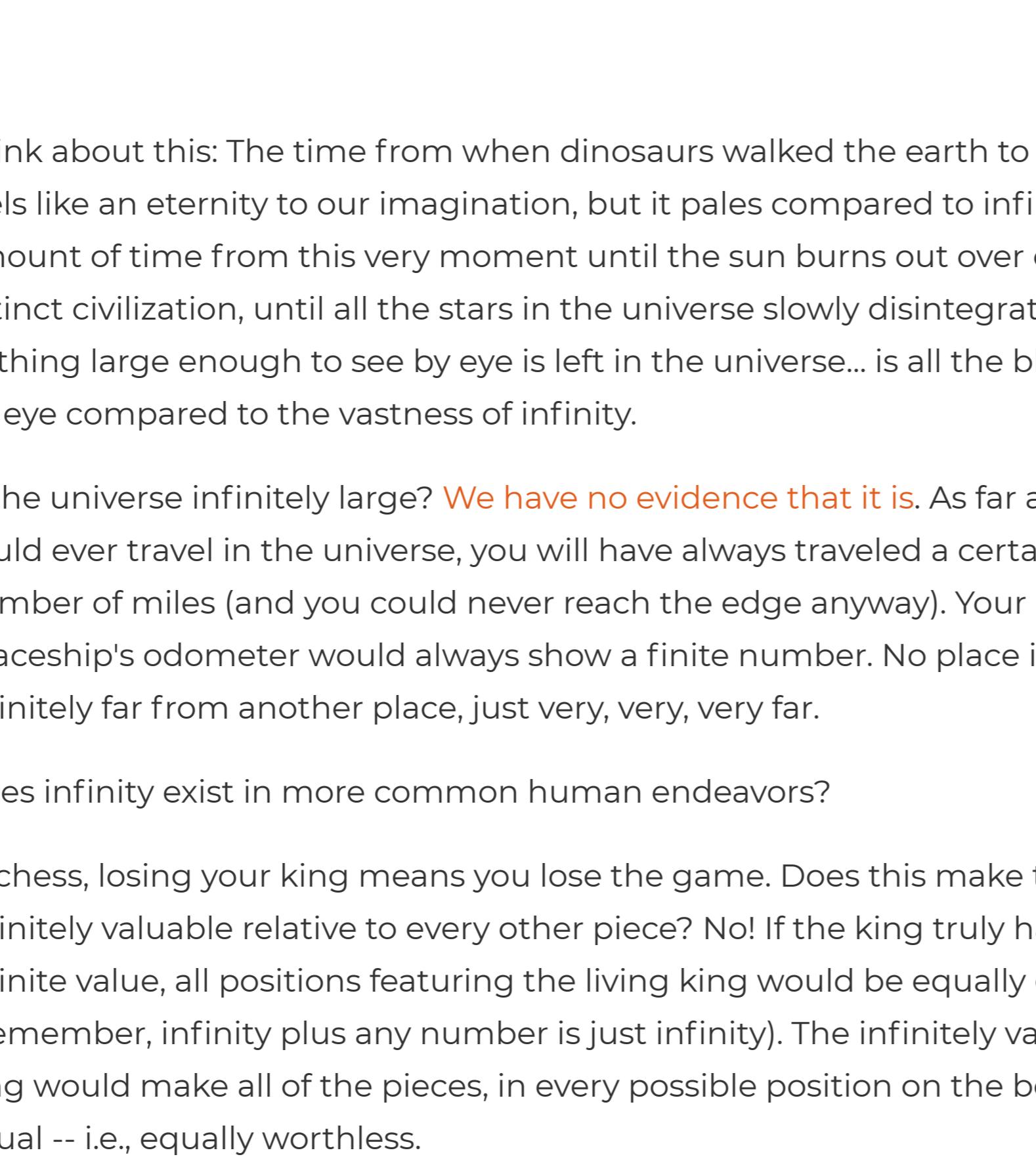
This post originally appeared on the RealClearScience Newton blog. Read the original [here](#).

Infinity is an invaluable abstract concept in mathematics, physics, and philosophy. Isaac Newton used the abstraction of infinitely small times and distances to formulate the calculus upon which all modern physics and much of mathematics relies. But, can we see infinity in the world around us? According to some, the answer is yes. I beg to differ.

The question centers on whether Infinity ( $\infty$ ) is a quantity, or amount. Amounts are sizes and distances and tallies -- and they are represented by numbers. Numbers only have importance relative to other numbers. Infinity, however, ruins all number comparisons.

Mathematically, number amounts are compared by division and addition:

$6/2=3$  and  $6+2=\infty$   
 $3/2=1.5$  and  $3+2=\infty$   
 $2/2=1$  and  $2+2=\infty$



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All numbers have relative value compared to any other number (in this case the number two). How about comparing infinity?

$6/\infty=0$  and  $6+\infty=\infty$   
 $3/\infty=0$  and  $3+\infty=\infty$   
 $2/\infty=0$  and  $2+\infty=\infty$

Compared to infinity, every other number is nothing. Infinity should not exist in the world we see because it would rewrite the rules for numbers: we would have infinity, and every other number would be nothing (0) by comparison.

Can we measure infinity in our universe? Does it exist in the same way that death and taxes and sunsets exist, and what are some possible real incarnations of infinity?

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