

'Probability' (pub. 16.10.15-18:11). Quote in M. Bergman & S. Paavola (Eds.), *The Commens Dictionary: Peirce's Terms in His Own Words. New Edition*. Retrieved from <http://www.commens.org/dictionary/entry/quote-letters-paul-carus-10>.

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**Term:** Probability

**Quote:** None of the books contain a definition of mathematical probability (which is what I mean by "probability" however measured) which will hold water. For the sake of simplicity, I will define it in a particular example. If, then, I say that the probability that if a certain die be thrown in the usual way it will turn up a number divisible by 3 (i.e., either 3 or 6) is  $1/3$ , what do I mean? I mean, of course, to state that that die has a certain habit or disposition of behaviour in its present state of wear. It is a would be and does not consist in actualities or single events in any multitude finite or infinite. Nevertheless a habit does consist in what *would* happen under certain circumstances if it should remain unchanged throughout an endless series of actual occurrences. I must therefore define that habit of the die in question which we express by saying that there is a probability of  $1/3$  (or odds of 1 to 2) that if it be thrown it will turn up a number divisible by 3 by saying how it would behave if, while remaining with its shape, etc. just as they are now, it were to be thrown an endless succession of times. Now it is very true that it is quite impossible that it should be thrown an infinite succession of times. But this is no objection to my supposing it, since that impossibility is merely a physical, or if you please, a metaphysical one, and is not due to any logical impossibility to the occurrence in a finite time of an endless succession of events each occupying a finite time. For when Achilles overtook the tortoise he had to go through such an endless series (endless *in the series*, but not endless *in time*) and supposedly actually did so.

**Source:** Peirce, C. S. (1890-1913). *Letters to Paul Carus*. MS [L] 77.

**References:** CP 8.225

**Date of** 1910 [c.]

**Quote:**

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