‘Analogy’ (pub. 06.01.13-20:02). 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-theory-probable-inference.

Term: Analogy

Quote: … But in what is known as “reasoning from analogy,” the class sampled is small, and no instance is taken twice. For example: we know that of the major planets the Earth, Mars, Jupiter, and Saturn revolve on their axes, and we conclude that the remaining four, Mercury, Venus, Uranus, and Neptune, probably do the like. [—] Our premisses here are that the Earth, Mars, Jupiter, and Saturn are a random sample of a natural class of major planets–a class which, though (so far as we know) it is very small, yet may be very extensive, comprising whatever there may be that revolves in a circular orbit around a great sun, is nearly spherical, shines with reflected light, is very large, etc. Now the examples of major planets that we can examine all rotate on their axes; whence we suppose that Mercury, Venus, Uranus, and Neptune, since they possess, so far as we know, all the properties common to the natural class to which the Earth, Mars, Jupiter, and Saturn belong, possess this property likewise. The points to be observed are, first, that any small class of things may be regarded as a mere sample of an actual or possible large class having the same properties and subject to the same conditions; second, that while we do not know what all these properties and conditions are, we do know some of them, which some may be considered as a random sample of all; third, that a random selection without replacement from a small class may be regarded as a true random selection from that infinite class of which the finite class is a random selection. The formula of the analogical inference presents, therefore, three premisses, thus:

S’, S”, S”’, are a random sample of some undefined class X, of whose characters P’, P”, P”’, are samples,
Q is P’, P”, P”’;
S’, S”, S”’, are R’s;
Hence, Q is an R.

We have evidently here an induction and an hypothesis followed by a deduction; thus:

Every X is, for example, P’, | S’, S”, S”’, etc., are samples
P”, P”’, etc., | of the X’s,
Q is found to be P’,P”,P”’, | S’, S”, S”’, etc., are found
etc.; | to be R’s;
Hence, hypothetically, Q is | Hence, inductively, every X

an X. | is an R.

Hence, deductively, Q is an R.

An argument from analogy may be strengthened by the addition of instance after instance to the premisses, until it loses its ampliative character by the exhaustion of the class and becomes a mere deduction of that kind called *complete induction, in* which, however, some shadow of the inductive character remains, as this name implies.

Source: Peirce, C. S. (1883). A Theory of Probable Inference. In C. S. Peirce (Ed.), *Studies in Logic by Members of the Johns Hopkins University* (pp. 126-181). Boston, MA: Little, Brown, and Company.

References: CP 2.733-734

Date of Quote: 1883

URL: http://www.commens.org/dictionary/entry/quote-theory-probable-inference