

Re: Epistemology 201: The Science of Science

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-03/4339.html>

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In sci.math Allan C Cybulskie <allan.c.cybulskie@yahoo.ca> wrote:

: <stephen@nomail.com> wrote in message
:> Consider a 2 cup measure. The possible values you could
:> measure with it are in the range [0,2]. Consider a 1 pint
:> measure. The possible values you could measure with it
:> are in the range [0,1]. Of course, 2 cups equals 1 pint in the
:> English system, and it is clear that any amount that fits
:> in the 2 cup measure also fits in the 1 pint measure. There
:> are not twice as many measurements possible with the 2 cup
:> measure. Similarly, using meters instead of feet does
:> not result in fewer possible results. The fact that
:> the number of possible measurements is independent of the
:> units used is quite intuitive.

: The example is also totally wrong. I can get far more accuracy of
: measurement from the 2 cup example than the pint example. Why? Because
: there are more numbers that I can retrieve from the 2 cup measure than the 1
: cup measure, allowing me to subdivide the measure further than I can with
: the pint measure.

You are assuming your conclusion. Do you really believe there are more possible quantities that fit into a 2 cup measure than a 1 pint measure? They are exactly the same size. Any quantity you can fit in one will fit in the other. Any lines you mark on a 2 cup measure you can also mark on a 1 cup measure, because they are exactly the same size. Apparently you think there is some quantity of y cups such that $y/2$ pints is an impossibility. I think most people intuitively recognize that the units used in measuring do not affect the number of possible measurements. Anything I can measure in feet I can measure in meters and vice versa. Anything I can measure in Celsius I can measure in Fahrenheit. It does not matter that the ranges of the measurements differ, because each measurement can be translated into any appropriate units. It is clearly true in the world of finite precision and only a finite number of possible measurements that anything measurable with a 2 cup measure is measurable with a 1 pint measure.

Stephen