

## Re: Epistemology 201: The Science of Science

**Source:** <http://sci.tech-archive.net/Archive/sci.physics/2005-03/10669.html>

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**From:** robert j. kolker (*nowhere\_at\_nowhere.net*)

**Date:** 03/20/05

Date: Sun, 20 Mar 2005 12:31:09 -0500

Lester Zick wrote:

> *On Sun, 20 Mar 2005 11:26:04 -0500, "robert j. kolker"*  
> *<nowhere@nowhere.net> in comp.ai.philosophy wrote:*  
>  
>  
>> *Lester Zick wrote:*  
>>  
>>> *There is a distinction between mathematics, Bob, and modern math.*  
>>  
>> *So you claim. Now show the difference. Be very explicit.*  
>  
>  
> *The difference between your first modern math definition for a circle*  
> *which actually defines a sphere and your second Euclidean definition*

You said there was a difference between mathematics and modern math. That is a very general statement. Substantiate it. Address yourself to the question I asked.

> *for a circle which allows you to pretend that circles are well defined*  
> *as the set of all points equidistant from any point without definition*  
> *for spatial dimensionality that allows you to pretend dimensionality*

Schmuck. What is the dimension of a plane, in the sense of maximal number of mutually orthogonal lines lying on a plane? Think! Put all 13 of your neurons to work.

> *is just so much vulcanized rubber.*

When I made the definition complete (my appologies for the initial omission) I made it plain that it was a figure on a plane. Now what can be plainer than a plane. Dimnsonality for vector spaces is not rubber, it is the cardinality of the maximal set of linearly independent vectors in the vector space. One must show that all maximal linearly independent sets have ths same cardinality (easy for finite dimensional vector spaces, not so easy for infinite dimensional vector spaces).

Except for specifying that a circle is a figure on a plane the definition gives no reference to dimensionality whatsoever. In fact one can show a circle on a plane (a two dimensional surface) is a one dimension set since it can be parametrically generated by one variable, to with the angle an arbitrary radius makes with a reference radius. That conclusion is not immediately clear from the definition. A lot of theorems have to be proven to show that.

Bob Kolker