Re: Math as Religion

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- *Date*: 10 Nov 2006 04:44:00 −0800

Gene Ward Smith wrote:

> stephen@xxxxxxxxxx wrote:
>
> > Who has said that mathematics is THE truth? The "mainstream"
> > folks disagreeing with Timothy Golden have made no claims
> > of truth. Timothy Golden is the one who seems to think that
> > it is THE truth that magnitude is more fundamental than the reals.
> > If he wishes to define magnitude rigourously and then define
> > the reals based on that, he is free to.
>
> As has been pointed out on numerous times, this is in fact an old idea,
> going back to the Greeks. Landau, for a modern example, develops
> positive reals from second order arithmetic of
> positive integers, and goes on from there. This has some advantages, in
> particular that the positive rationals, as the ratios of positive
> integers, may be constructed without worrying about division by zero,
> and then the positive reals (or magnitude) can be constructed next.
>
> One can use polysigned numbers, if one so chooses, for constructions.
> But Tim seems unable to say why we should.

Gene, like Dik, represents the establishment.
This is Gene on a prior thread:

"I've pointed out several times that you do not have such a
construction. I'll repeat it: you have NOT constructed the reals. This
is because your definition requires that the reals have already been
constructed. "

− http://groups.google.com/group/sci.math/msg/a340f8254714b780

The important distinction that allows this conflict is in how we
dissect the number system.
Because the polysign construction imposes the identity law

Sum for s = 1 to n (s x) = 0
we need not include this piece of information in the constituent components of this law. The law builds sign and so to claim that sign is a component of its constituents is inconsistent. This is a new dissection and inverts a small piece of branching of the old tree. If we adopt the new way then the old way (Gene's context) is suspect. Though the incompatibility is minor the stricture of mathematics does not allow even the most minor conflict. For n=2 the polysign numbers are the real numbers and identity law above expands out to
$-x + x = 0$.
This is recognizable as accurate to even a grade school child, but this law is not a standard part of the definition of the real numbers. Yet it is this form which allows the generalization of sign. Since this information has been stated at this point there is no need to repeat it anywhere else. This information principle is what makes a tight construction. Certainly what is left of the continuous portion x is merely a magnitude.

The benefit of this approach is that the complex numbers are barely different than the real numbers. The reals are P2 and the complex numbers are P3. Simply changing n by 1 gets the complex numbers from the same laws that define the real numbers. This statement alone is enough reason to answer why any mathematician should take interest in the polysign construction. This is a primitive and productive construction that poses and answers many questions:

Are the field criteria accurate?
Must a linear system obey the magnitudinal law
$| A B | = | A | | B |$?
Does time correspond to P1?
Do improper transformations model electron spin?
Do n−poles exist?
Why spacetime?

That magnitude is fundamental and can be married to sign is the foundation which allows the polysign concept to thrive. Previously in debating this I have provided the gorilla conjecture, which poses that since we can teach a gorilla the principle of magnitude that magnitude is fundamental. Here we may enter into a psychological examination of mathematical learning. Is it considered sufficient by the teaching mathematician that a student be capable of repeatable error free results to demonstrate understanding? Under this criteria the magnitude is a primitive feature and the reals a sincere failing point. How many sign errors have been generated by the human race? Yet how many children unschooled in mathematics at all can pick out the larger of two objects? This is how brutally simple magnitude is. The uneducated mind is capable of percieving it, yet the highly educated mathematician refutes the principle.
And so a farce is made of mathematicians. I do not respect religion and I do not respect mathematicians who practice their subject as one.

−Tim

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