

Re: Why does Cantor a target for cranks?

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- *From:* "galathaea" <galathaea@xxxxxxxx>
 - *Date:* 12 Dec 2006 12:32:17 -0800
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you have been one of the more
careful and reasoned responders
to this never-ending thread-of-threads

i have also respected wildberger for quite some time

so i hope you don't mind if i ask some questions

Robert Maas, see <http://tinyurl.com/uh3t> wrote:

From: "Peter Webb" <webbfamily-diespam...@xxxxxxxxxxxxxxxxxxxx>

Wildberger's hyperbole of speech notwithstanding, his
argument is not particularly cranky.
<http://web.maths.unsw.edu.au/~norman/views2.htm>

I'm looking at that now. It looks rather cranky to me, but also
rather interesting and insightful, a mix of the two.

why the obsession with the label "crank"?

this is one thing i really do not understand

it seems strongest in theoreticians and mathematicians
but i have never understood this need to label

is he a crank?
maybe not?
what if i get it wrong?
am i a crank?

it seems the only legitimate characterisation
as a mathematician at least
is: "is this person _consistent_"?

people like james harris are regularly inconsistent

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and therefore are not reliable information sources

but crankdom allows characterisation based on personal biases
completely unrelated to mathematical content

As I start to
respond here, I'm at the point where he points out (not his words
here, my paraphrasing:) that in category theory we side-step
Russel's paradox by dealing with categories which are not
fullfledged sets, so we don't have *all* finite groups for example
collected into a single set, rather we have a category of finite
groups which is basically a schemata for dealing with such things.

well...

normally the discourse is through indirection to a given universe

that is pretty standard category theory
and wildberger doesn't give this the recognition it deserves
(you seem to read him as accepting "category" as acceptable
but that is not my reading)

category theorists went to great trouble to avoid paradox
by rigorously defining small categories and universes

see, e.g.

Seminaire Geometrique Algebrique (1963–1964)

m. artin, a. grothendiek, j-l. verdier

"theorie des topos et cohomologie etale des schemas"

So-far that's all standard. Now he applies the same logic to the
integers. We don't really need *all* the integers collected into a
set. It suffices, for purposes of arithmetic, that we have a
category of integers, with general rules for working with them. In
that way we eliminate the need for infinite sets. That's an
interesting point of view, IMO. An alternative somewhere between
his view and the standard view of Peano is my algorithmic view,
that if we have a computing process that generates a stream of
output data in a deterministic way, and that program could in
principle run forever, always generating more and more data without
bound, then it's meaningful for such a specific process (algorithm)
to talk of the totality of all data it will ever generate if
allowed to run forever. So we don't exclude infinite sets, but we
include them only as a way of talking about specific unbounded data
output from algorithms.

but where does this meaning come from?

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and why is it necessary?

this is the whole point of the computational constructivist critique
of kolmogorov and markov
that such completions have no computational meaning

they are not necessary for any constructive algorithm
either

if you can generate any finite member algorithmically
you can generate any finite subset algorithmically

what use is it to speak of a unfulfillable collection process?

[...]

Actually my original example of "systemic ambiguity" dealt with simple integers as an abstraction of counted sets of specific objects. For example, I have two ears, two eyes, two hands, two feet, two nostrils, and from those examples and many more we have the abstract notion of a set containing two objects. Notationally, we can write the number 2 in ink or pencil or felt-tip-pen or chalk or type it into a computer, we can write it in Arabic numerals or in English or any of several other languages, or in Roman numerals. We can write it in binary. And we can write it large or small, with any color of pen or chalk, any font or style, bold or italic. Yet all these different ways to express 2 or II or zwei, and the cardinality of all those various sets of two ears or two hands, are conflated together into a single concept of the number 2. The key in math, whether conflating various numbers 2 into a single abstract number 2, or conflating various groups of order 6 into the abstract symmetry group on three objects and various other groups also of order 6 into the abstract cyclic group of order 6, is to conflate only things which have properties in common, state clearly what those common properties are, not try to derive anything that is specific to some members of the category but not others and claim it applies to them all, and to be consistent in sticking with a particular category throughout a derivation/proof/problem instead of switching definitions midway.

that is the whole origin of symbology

the abstraction on inputs

So while I'm
basically a "computationalist", I'm not a "finitist". Still the
finitist viewpoint of Wildberger is interesting and enlightening.

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doesn't computationalism at least bring you to constructivism?

Twentieth century physicists have learnt to disregard `concepts' which are not measurable or observable in some form or another, and we mathematicians ought to be equally skeptical.
Good point, and worth debating how it should be applied in math.

isn't that the whole point here?

Now back to the newsgroup article:
(Snip some quotes from the Wildberger's Web page, some I already quoted above, some I didn't quote.)

doesn't this seem at least a little bit "cranky" to you?
Computable reals as uncountable?

(I partly quoted that.)

More precisely, as not computably-enumerable. Nothing cranky about that. Everybody since Turing knows that fact!

Mathematics as a secret cult?

(I didn't quote that, see previous article, or Web page, if curious.)

Yeah, that's rather cranky.

again this obsession with crankdom...

why does rational discussion have to turn to automatic avoidance labelling?

wildberger gave very clear reasons why he used the term "secret societies"

they can be debated openly without labeling the author

i personally believe his evaluation is pretty spot-on and the newsgroups show just this cultish behavior

repetition of mantras

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inability to question foundations
etc.

in many professional mathematicians...

galathaea: prankster, fablist, magician, liar

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