Re: Review of Mueckenheims book.

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- *From*: "MoeBlee" <jazzmobe@xxxxxxxxxxx>
- *Date*: 9 Mar 2007 11:02:51 −0800

On Mar 9, 9:31 am, David Marcus <DavidMar...@xxxxxxxxxxxxxx> wrote:

> MoeBlee wrote:
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> > On Mar 8, 6:55 pm, David Marcus <DavidMar...@xxxxxxxxxxxxxx> wrote:
> >
> > > MoeBlee wrote:
> > >
> > > > (3) Let a function be a triple <D C f>.
> > >
> > > (3) it is.
> >
> > You just keep asserting. I don't claim that you can't find such a
> > definition in some advanced areas of mathematics (I always said there
> > is all kind of terminology out ther). But please show me basic
> > textbooks in abstract algebra, analysis or topology that claim a
> > function is a triple.
>
> All the ones that I listed in my previous post do exactly that, if you
> know how to read a normal non−formal math book.

First, I ask you to read my post before responding to it line by line. For example, I ask you not type your response to the first of the following paragraphs before you're read the second too. (You might do that anyway; I'm not suggesting that you don't.)

Not one of those examples you mentioned says that a function actually is a triple. You may choose to read INTO the prose mixed with symbols to formalize that way, but the prose mixed with symbols does not actually say that a function is a triple. And I may elect for a triple also but not take the function itself to be the triple.

It's fine to read above and beyond the text to put it into sharper

formalization. But it is just imperious of you to claim that your branch in going above and beyond the actual text is standard as opposed to not taking the function itself to be the triple, even though yours is explicitly inconsistent with such analysis books as Browder and Apostol, just for example (while also explicity endorsed by books such as Hocking & Young).

And, by the way, you just said "all" of the books you had mentioned. No, actually six of the seven non mathematical logic books (or was it five of the six?).

Your INTREPRETATION is not standard in general mathematics. Notice that I never claimed that my interpretation is standard in general mathematics. I only said that it is found in many books even aside from set theory, and is actually entailed (as I proved, formula for formula) by many of the common definitions.

You are being dogmatic by insisting that your INTERPOLATION must be standard and that mine must result from a lack of "knowing how to read a math book".

Neither of our interpolations are standard, but I never claimed that my INTERPOLATION is standard. Your snide "know how to read a math book" is dismissed.

Beccause of cross posting and my replies getting out of correct sequence (due to problems with my posting interface), I'm going to put here some passages I wrote to Virgil:

I recognize that the 'function is a triple' approach (as opposed to there is a triple of which the function is a coordinate approach) may be better suited for many mathematical purposes. That is not at issue. What is at issue is, with you, (1) the standard set theoretical definition of 'is a function', and, with David, (2) whether the 'function is a triple' approach is standard in general mathematics. On (1), the standard set theoretic definition is as I mentioned it. On (2), while the 'function is a triple' approach can be found explicity in some books (I found it in Hocking & Young last night), it is not standard in general mathematics, as it is explicitly contradicted in such analysis texts as Browder and Apostol, and algebra texts such as Warner, and is inconsistent otherwise in many texts, and even inconsistent with the way functions are handled in some topology texts.

Between two triples proposals, David's clashes with set theory and mine may clash with certain uses where indeed a mathematician wants to take a function to BE a bundle of a certain relation, domain and codomain, or other variations.

But I'm not proposing a definition that such mathematicians who want the "bundle" would have to use. I'm proposing a formalization so that

we don't have to throw out the set theory definition and such that the formalization is for anyone who is just interested in seeing a formalization carried out, not necessarily for the everyday purposes of mathematicians who want to use the "bundle" approach.

Neither route, David's or mine, can satisfy both ends − set theory at one end and other kinds of ways of speaking as are found in what Ralf Bader mentioned or in category theory, at least in the way you described it. A formalization enforces a uniformity of definitions while in fact the whole of mathematics does not have such a uniformity. Such is life...

> > And, no, saying "f is a function from D to C" or "f is a subset of DxC such that...", etc. is NOT claiming that f is a triple.
>
> Wrong.
>
> > I am amazed that you would say this. Math books are not written in the formal language of set theory.
>
> You don't need to tell ME that.
>
> > This doesn't mean that an experienced mathematician doesn't know how to translate the usual prose into such a language, if they feel the need.
>
> What is at issue is that you arrogate that YOUR interpolation must be standard, even though your INTERPOLATION is explicitly inconsistent with a good many texts and inconsistent with how those texts handle the matter in later parts of the book (e.g., see McCarty on topology in which he speaks of the function f:x−>y then goes right ahead to speak of f itself as the function, not the function being <f x y> or whatever).
>
> As you would perhaps agree, a math text might use all kinds of informal ways of speaking that if taken literally would be inconsistent. And, yes, we as readers reconcile that, either intuitively or formally. So when a book is going in both directions at once − sometimes speaking of the function f:x−>y and sometimes speaking of the function f − it is a matter of our choice as to which branch we want to take for our own mental (or even scribed) formalization. Your choosing one branch is fine, but that does not make it standard, especially since your branch is explicity

inconsistent with a fair number of textbooks.

What is nuts about this is that we could resolve this simply:

I recognize that my 'function' is to be spelled 'munction' and you keep 'function' for certain kinds of triples. Or you recognize that your 'function' is to be spelled 'dunction' and I keep 'function' for certain kinds of sets of ordered pairs.

Meanwhile, we both understand the textbooks we read.

And in that light, you egregiously overstep by suggesting that I don't know how to read a math book.

> The fact that some logic/set theory books find it handy to use a different definition of "function" for technical reasons does not change the fact that the standard definition in virtually all of mathematics is a triple (when formalized in set theory).

No, you're just arrogating that YOUR formalization is standard, even though it is explicity inconistent with a good number of general math books.

> > Your proposal just rides roughshod over the simplicity of doing things like proving that f is a function in the manner Halmos did and as is quite in keeping with a lot of common mathematical practice.
>
> So, you still insist that your reading of Halmos is correct even after I posted what Halmos actually wrote and pointed out that you are wrong?

No, I replied and showed that you are incorrect. Halmos EXPLICITY gives the TEST for determing whether u is a function: That test is whether u is a relation that is many−one, as is standard in set theory. Look at it. Right there on page 48.

MoeBlee

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