Re: Implementable Set Theory and Consistency of ZFC

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- *From*: "Jesse F. Hughes" <jesse@xxxxxxxxxxxxx>
- *Date*: Wed, 31 Oct 2007 09:31:08 −0400

Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxx> writes:

> Jesse F. Hughes wrote:
>
>> Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxx> writes:
>>
>>> So, even if I don't make use of (5−8), a proof of A from
>>> (1−4) is a
>>> proof from (1−8) ?
>>
>> Of course.
>>
>>> So, even if I say "there exists a Foo", then such a statement is
>>> a
>>> valid premise for proving that the integral of 1/t from 1 to x
>>> is
>>> ln(x) ? Weird ..
>>
>> The statement can be proved in the theory consisting of the usual
>> axioms for real analysis and "there exists a Foo", yes. Do you think
>> that every theorem of ZFC uses every axiom of ZFC in its proof?
>
> It seens we have a different picture in our mind about the meaning of an
> implication A => B , as has been pinpointed by Ullrich as well. This is
> what I say about in in my article:
>
>> Another philosophical note is in place, when we are saying that we "make
>> with
>> an axiom" and denote this as an implication A => B. In common
>> mathematics,
>> the implication => just means what is de ned by a truth table in propositional
>> logic. But there is another form of mathematics, called constructivism.

> > > Within
> > > constructivist mathematics, an implication has a more "operational" meaning,
> > > like: given A, we can construct B from A. So if we say "make with an
> > > axiom",
> > > then it is expressed herewith that we adhere to the constructivist meaning of
> > > an implication. End of philosophical note.

> > I think that you and Ullrich adhere to the common "material
> > implication" of mathematical logic, where there is no place for
> > axioms that "cause" a theorem (so to speak). In the latter sense
> > there is no room for premises like "there exists a Foo". The axiom
> > of Infinity is of the latter kind.

Sorry, I really can make no sense of this explanation.

As far as I understand constructivism in any case, if a theory T constructively proves statement P, then so does T + X where X is any statement. So it does not seem to me that you have addressed the issue.

Here's what I think you *can* say: Statements (5)−(8) are true in your model and your model is canonical in a sense (I think it's minimal). It is not the case that (5)−(8) are therefore *entailed* by (1)−(4) in any sense of the word that I understand.

−−
"I've noticed [...] I routinely have been putting up flawed equations
with my surrogate factoring work. My take on it is that I have some
deep fear that the work is too dangerous and am sabotaging myself."
−− James S. Harris
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