Re: Countable models of ZFC

Source: http://sci.tech−archive.net/Archive/sci.logic/2007−10/msg00223.html

- *From*: "R. Srinivasan" <sradhakr@xxxxxxxxxx>
- *Date*: Sat, 06 Oct 2007 08:07:38 −0700

On Oct 3, 9:55 am, Rupert <rupertmccal...@xxxxxxxxx> wrote:

> On Oct 3, 9:29 am, "R. Srinivasan" <sradh...@xxxxxxxxxx> wrote:
> [...]
>
> > But personally I would prefer to take George as my graduate student,
> > if I were a Prof. (fortunately I am not). In my view, guys like George
> > are more likely to radically challenge the status quo. George is not
> > afraid to call a spade a spade, and though he will get a lot of stuff
> > wrong, he *could* eventually hit the jackpot with his approach.
> > Whereas Rupert, like a lot of other smart guys in this newsgroup, is
> > (in my view) too deeply into the status quo to radically challenge it.
>
> I'm a little unclear about what you mean by the "status quo".
>
> I quite often have the experience that I state a theorem and then
> George starts ranting and raving about it, and using a lot of capital
> letters, based on philosophical misgivings. Now, there's nothing wrong
> with being interested in philosophy, and having philosophical views
> which challenge the "status quo", but it shouldn't interfere with your
> ability to understand mathematics. There's no doubt that the theorems
> I state are theorems of ZFC (for example) and this could in principle,
> be checked by computer. George should try to develop the capacity to
> recognize facts like those and to separate them from the philosophical
> axes he likes to grind.
>
> Now, when you say I'm not going to challenge the "status quo", do you
> mean as a philosopher, or as a mathematician? Most mainstream
> mathematicians don't worry about foundational issues at all. They
> agree on what counts as rigorous mathematical reasoning (most of them
> are perfectly happy with the law of excluded middle, impredicativity,
> the axiom of choice, and so forth), and they just get on with doing
> mathematics, and once something has been established as a theorem
> there usually isn't much controversy about it. People who work in
> mathematical logic are more likely to think about foundational issues,
> but that doesn't need to affect the mathematical part of your work,
> you just specify in what formal theory your results go through.

> In the context of philosophy the idea of challenging the "status quo" makes a lot more sense. But there's also less of a consensus to challenge in the first place. I quite like Geoffrey Hellman's modal structuralism, myself, which is a form of mathematical realism which is quite friendly towards strong set−theoretic reasoning. I'm not sure how much of a "mainstream view" this is. I have the feeling that people who are more philosophical than mathematical tend to be a bit more skeptical about mathematical realism and strong set−theoretic reasoning than I am. But on the other hand these ideas sit comfortably with generally accepted mathematical practice today. So perhaps in this sense I don't pose much of a challenge to the "status quo".
>
> But I am interested in other foundational views and am happy to consider them with an open mind. It's just that I personally have never found George's points to be very coherently expressed and I also think that it's unfortunate that he seems to allow his philosophical views to get in the way of understanding mathematics.

Aatu Koskensilta wrote:

> > R. Srinivasan wrote:
> > But personally I would prefer to take George as my graduate student, if I were a Prof. (fortunately I am not). In my view, guys like George are more likely to radically challenge the status quo. George is not afraid to call a spade a spade, and though he will get a lot of stuff wrong, he *could* eventually hit the jackpot with his approach.
>
> By shouting at people at random? Challenging stagnant orthodoxy is swell and good, but it is not very effectively done by accusing people of lying, erratic capitalisation, obsessing over trivialities and so on. If George were to formulate some coherent conception of mathematics −− perhaps he has and is carefully hiding it from the evil liars infecting the news −− and explained it in understandable terms, something interesting might possibly come out of it (we might recall Yesenin−Volpin's ideas, which have recently been studied, from a classical point of view, in context of non−standard models). His present behaviour only serves to make him look silly.

I agree that George's style of communication puts off people and I have also been at the receiving end. He may eventually find that being more diplomatic and polite will get him further ahead in life.

> Whereas Rupert, like a lot of other smart guys in this newsgroup, is (in my view) too deeply into the status quo to radically challenge it.

> An absurd idea. Anyone with an interest in logic would be delighted to come up with something truly novel, to find some hitherto unknown problem in currently accepted notions, to devise a new way of conceiving mathematics etc.

What I meant by "status quo" is the following. Today there is a huge body of knowledge in almost any technical field and it takes several years to master even some portion of it and, say, graduate with a Ph.D. Once you have climbed that mountain you are under pressure to look out for positions in academics and so your research proposals must usually be oriented towards the mainstream, at least initially. Otherwise you may not be able to find suitable positions. It may still be possible for you to come out with radical proposals that seek to challenge the established ideas, but only after you have "established" yourselves for several years, if not decades.

But by then your enthusiasm and incentive to mount any such radical challenge would have dimmed considerably, if only because you would have already published several papers yourselves in the same areas that you may wish to challenge. The very nature of logic and foundations is such that once you have gotten used to one particular viewpoint (e.g. classical logic, set theory), you more or less become entrenched and will not easily open your mind to other viewpoints.

I also suspect that there is a lot of unjustified peer pressure on young researchers to fall in line with "established" ideas and not challenge them. There is already a mountain of established knowledge in, for example, mathematics and physics. It seems to me that smart young researchers working in foundations/logic today simply cannot afford to question the basis of such long−standing ideas. These guys are more or less forced to accept that this knowledge exists and they have to find a logic/philosophy that somehow justifies it.

Whereas I think that logic and philosophy are prior to everything else and have to be fixed without taking into account any such obligations. It is the logic that determines what is mathematics and ;physics, and not the other way round. However, what has been verified by experiment, say, in Physics, could have a different justification in some new logic. SImilarly it is quite possible that some useful mathematical theorems established using set theory could also possibly be justified by other means, say in a different theory based on a new logic. Unfortunately people working from such a viewpoint will not survive in today's academic world.

Regards, RS

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