Re: Skolem Again

Source: http://sci.tech−archive.net/Archive/sci.logic/2005−10/msg00242.html

- *From*: Chris Menzel <cmenzel@xxxxxxxxxxxxxxxxxxx>
- *Date*: 9 Oct 2005 02:42:21 GMT

On 7 Oct 2005 10:38:21 −0700, William of Ockham
<d3uckner@xxxxxxxxxxxxxx> said:
> Chris Menzel wrote:
>
>> But it's a philosophical problem having to do with a *technical*
>> result in mathematical logic. The ontological status of photons is a
>> philosophical problem as well; would you expect to be taken seriously
>> if you were to take up that problem with no technical competence in
>> quantum mechanics, and were not even able to provide any more than a
>> layperson's understanding of a wave? If so, well, I marvel at your
>> hubris. If not, what's the difference in this case?
>
> Three differences. 1 this is a usenet group, not a peer−reviewed
> journal. Just look around.

Who said anything about peer−reviewed journals? The point was simply
that you won't be taken any more seriously here, spouting off ignorantly
about the L−S theorem, than you would be spouting off ignorantly about
double−slit experiments amongst folks who are knowledgeable about
physics.

> 2 I don't know about photons or waves, but they sound like complex
> concepts, rather than foundational ones.

Waves are as foundational to physics as semantics is to logic. But I
guess you mean "foundational" in some special philosopher's sense.

> 3 The foundational concepts of mathematics are (since Frege) very
> close to those studied by philosophers. Namely reference,
> predication, truth, generality, existence and so on.

True enough, but, once again: the issue here is not *just* about
meaning. It's about the implications of a technical result of which you
are ignorant.

>> Well, P2 is scarcely grammatical, but let's focus on P3.
>
> What is ungrammatical about "The same theory must have the same
> meaning"? Absolutely standard English.

Not the English I speak.

> Meaning, for those who prefer it expressed that way, if x is a theory
> and y is a theory, and x=y, then x has the same meaning as y.

That I can understand.

> In any case, as you now recognise, the disagreement is bound to be
> about P3.
>
>> From the fact that a given interpretation of a theory makes all of
>> its axioms true it does not follow that it can properly be considered
>> the theory's meaning.
>
> But if grasp of meaning is grasp of truth−conditions, this is terribly
> difficult to avoid.

Why? I could axiomatize the declarative utterances I make throughout
the day and, assuming they are consistent, by elementary results of
model theory, they have an interpretion in the natural numbers. Does it
follow that I *meant* to be talking about the numbers all day?
Åccording to you, yes. Your view is patently absurd.

>> Some of its objects may, for example, have properties that we clearly
>> do not intend. Hence, the model can't be what we mean by our axioms.
>
> In what sense do the objects have properties we "don't intend"?

In the sense in which the objects playing certain roles within a model
might have properties that we know are not exhibited by the real McCoy.
The set that plays the role of the real numbers, for example, might be
countable in such a model.

> If the objects all fit the interpretation, as they clearly all do, how
> on earth can this happen?

Well, that is one of the things that a competent understanding of
first−order model theory can reveal to you.

> Do you mean, a given interpretation may result in "x is uncountable"
> being true of some set of things of which it is 'really' false?

True *in some model* of some set of things of which it is "really"
false. Most of your confusion arises from the fact that you are having
such trouble distinguishing truth from truth in a model. A little
knowledge in your case is truly a dangerous thing.

> But what does 'really' mean here? Suppose jake says he has a dolphin.
> He says it has four legs, a shaggy coat, and it barks. Ah, you say,
> he 'really' means a dog.

Well, no, I'd say he's confused about the meaning of 'dolphin' in English. But your little story is neither here nor there. No one (no one competent, anyway) is confused about the meaning of 'x is uncountable' the way that Jake is confused about the meaning of 'dolphin'. We *know* when it is true of a countable set in an unintended model of set theory.

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- ***Follow−Ups***:
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    - ◊ *From:* William of Ockham
  - ♦ ***Re: Skolem Again***
    - ◊ *From:* Lee Rudolph

- ***References***:
  - ♦ ***Skolem Again***
    - ◊ *From:* William of Ockham
  - ♦ ***Re: Skolem Again***
    - ◊ *From:* Chris Menzel
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