

Re: they mention various metaphors and ramble about various concerns (Re: Kuratowski Ordered Pair)

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Source: <http://sci.tech-archive.net/Archive/sci.math/2007-12/msg04541.html>

- *From:* Marshall <marshall.spight@xxxxxxxxxx>
 - *Date:* Sat, 22 Dec 2007 11:49:57 -0800 (PST)
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On Dec 22, 1:21 am, galathaea <galath...@xxxxxxxxxx> wrote:

On Dec 22, 12:29 am, Marshall <marshall.spi...@xxxxxxxxxx> wrote:

On Dec 21, 9:10 pm, galathaea <galath...@xxxxxxxxxx> wrote:

On Dec 21, 2:55 pm, Marshall <marshall.spi...@xxxxxxxxxx> wrote:

On Dec 21, 1:22 pm, galathaea <galath...@xxxxxxxxxx> wrote:

it is regularly pointed out in
the foundations of math
that the concept of 2 cannot
be defined
without some presumption
that the parser already has
some bivalence

whether in two neighboring
symbols
or two different symbols
or some other embedding of
the concept innately

pairs

this is not true of higher
naturals

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This is just syntax again. This is not "the foundations" of math; this is the syntax of math. We could as well "write" expression in trees, assembling them via something like tinker toys, where we have spokes and edges. Or any of a variety of other ways. Linear strings of symbols are convenient; don't mistake convenience for semantics.

there is no mistake

definitions are syntactical

one tries to make the syntax obtain the desired semantic properties

Huh who what? Syntax has semantic properties?

"Syntax is syntax and semantics is semantics and never the twain shall meet."

Hmmm. Doesn't have quite the poetic ring to it one might wish. Still, the point is, syntax doesn't have semantic properties. So I can't imagine what you mean.

do you have familiarity with formal semantics?
have you read tarski?
do you know any model theory?
interpretations?

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Haven't read Tarski. Have read Pierce. Familiar with operational semantics. Not familiar with denotational semantics. Have studied parsing. Have studied a variety programming languages. I know what "interpretations" and "valuations" are in the context of predicate logic, say. Am in the market for an intro model theory book.

i can't imagine what you mean by
"never the twain will meet"

Here's a syntax:

```
eq ::= product ('=' product)*;  
product ::= sum ('*' sum)*;  
sum ::= name ('+' name)*;  
name ::= [a-z]+;
```

With this syntax, what does

$a+b=b+a$

evaluate to? True? False? The name of a Swedish music sensation ("abba"?) Is * associative? Does * distribute over +?

Or is it the case that the answers depend on the semantics, independent of the syntax?

Marshall

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