Re: The fallacy of strengthened liar's paradox.

Source: http://sci.tech−archive.net/Archive/sci.logic/2007−12/msg01268.html

- *From*: Jim Burns <burns.87@xxxxxxx>

- *Date*: Sun, 30 Dec 2007 23:42:06 −0500

Marshall wrote:

> On Dec 29, 3:40 pm, djr...@xxxxxxxxxx wrote:
>
> > The statement "1/0" is not syntactically correct.
>
> An intriguing statement! Can you supply further justification?
> It appears syntactically correct to me, but perhaps I am not
> clear what you mean by that.
>
> Further thoughts:
>
> What is the meaning of the expression
>
> 1/(x−1)
>
> When x=2? When x=1? It is the same syntax in both cases,
> isn't it?

The expressions [2] and [1],

1/(x−1) [2] (note: x = 2)
1/(x−1) [1] (note: x = 1)

have exactly the same characters in the same order, since the additional information noted is not part of the expressions. I am tempted to say that they therefore have the same syntax.

However, in English, the same expression, character for character, placed in different contexts can have clearly different syntaxes. A good example that comes to mind (Groucho Marx:) "Time flies like an arrow;

fruit flies like a banana." Certainly, the goal
in mathematics is to be completely unambiguous,
very much unlike English, but I can't say, myself,
whether we've arrived at our goal.

In its most common context, the expression "1/(x−1)"
carries an often−tacit assumption that x <> 1.
What does it mean to me to have contradictory
assumptions to deal with? Not much, unfortunately.
If I fall back upon my classroom experience, all I
can remember is that this is a situation to be avoided.

Is there a /syntactic/ difference between having
a contradiction and not having one? I guess I
don't know what is and is not syntax well enough
to be sure. I am willing to be educated on the point.

I think what the poster you're responding to may have meant
that the expression "1/0" can be determined to be
forbidden by purely mechanical means (hence, "syntactic").

Given a definition of syntax that broad, I would stick
my neck out and say that, yes, the syntax of the expression
"1/(x−1)" is different when x = 2 from when x = 1.

Jim Burns
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