Re: The Law of the Excluded Middle again (long)

Source: http://sci.tech−archive.net/Archive/sci.math/2007−12/msg00753.html

- *From*: Randy Poe <poespam−trap@xxxxxxxxx>
- *Date*: Mon, 3 Dec 2007 20:09:02 −0800 (PST)

On Dec 3, 6:32 pm, Angus Rodgers <twir...@xxxxxxxxxxx> wrote:

> On Mon, 3 Dec 2007 14:12:38 −0800 (PST), Randy Poe
>
> <poespam−t...@xxxxxxxxx> wrote:
>
>> On Dec 3, 8:07 am, Angus Rodgers <twir...@xxxxxxxxxxx> wrote:
>>
>>> On Mon, 03 Dec 2007 04:24:27 −0500, quasi
>>>
>>> I don't know how to explain my point better. Rather than try
>>> to do so (which would only lead to further possibly
>>> unreadable
>>> verbiage), may I simply ask how /you/ think of the meaning
>>> of
>>> (for example) the statement "either x > 1 or x <= 1", where x
>>> is a variable, which has been introduced in an informal proof,
>>> and you are still in the middle of the proof? No−one is asking
>>> for this statement to be frozen, quantified, and then assigned
>>> a
>>> truth value!
>>
>> I can't understand what is bothering you about such
>> a statement. I would say that of course it has
>> a truth value. And if it is a valid proof, then
>> that truth value better be "T".
>>
>> Why do you think we can't say "either x>1 or x<=1"
>> in a proof? If x is a real number, there aren't
>> any other possibilities.

> We are apparently in heated agreement! Nothing at all bothers
> me about such a statement occurring in a proof! But apparently,
> according to constructivists such as Keith Ramsay and galathaea,
> it /ought/ to bother me; and, as both those people are better
> mathematicians than I am, it bothers me that they think that it
> should bother me, when it doesn't.

Somehow I think you're seriously mangling something
perfectly reasonable other people are saying.

> But apparently I should instead think of a hypothetical situation
> in which someone (not necessarily a single individual, but some
> kind of generalised subject) has actually constructed some numbers
> x, y and z. In such a situation, it is not possible to say with
> certainty either that x > 1 or that x <= 1, because either of
> these statements would require a proof, which simply might not
> be available (to the person or "subject" in question).

Yes, it is possible to say that. For every real number,
either x > 1, or x <= 1. There are no real numbers
which fail to meet one of these conditions. That
requires no proof. It is in fact a restatement of
the trichotomy axiom.

So you are directly contradicting what you said
above. I asked you what problem you had with the
statement "either x > 1 or x <= 1". You said you
had no problem with it. A short paragraph later,
you say you can't accept it as true without "proof".
That constitutes a problem.

So again I ask you, what problem do you have with
it? Why do you not accept that statement to be
true of all real numbers?

− Randy
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