Re: Calculus XOR Probability

Source: http://sci.tech−archive.net/Archive/sci.math/2006−04/msg03675.html

- *From*: Tony Orlow <aeo6@xxxxxxxxxxx>
- *Date*: Wed, 19 Apr 2006 16:18:37 −0400

imaginatorium@xxxxxxxxxxxxx said:

> Tony Orlow wrote:
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> > Matt Gutting said:
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> > > > > > > Tony Orlow wrote:
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> > > > > > <snip>
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> > > > > > > > Basically, all I'm saying boils down to inductive proof of equality holding for infinite n.

If some relationship between measures of a set holds for all finite cases greater than some n, then it can be considered to hold for infinite n,

(Matt)

How do you know that there are any infinite n in the first place?

(Tony again)

Because there are sets with infinite

numbers of elements, such as any set of all reals in a finite interval. You cannot have half a real number in your set, so this infinite number is integral, and therefore part of what I consider the integers, or hyperintegers. Otherwise, infinite sets cannot have a size, which makes the "infinite" part kind of meaningless.

But how do you know it's an integer in the first place? In other words, what makes you so sure that there is an integer describing the size of this set? Must sizes always be describable by a number? If so, why?

Matt

Because the size of the set is the count of the elements included in it, as far as I'm concerned. That's why I don't accept a system where you add an infinite number of elements and the "size" doesn't change. You don't normally have fractional elements in a set, so this "count"

has got to be integral, whether
it's finite or infinite. Of course, if you are
using something like fuzzy set
theory, you may very well have set sizes
which are not integral, but I don't
think that's what we're discussing, is it?

I'm not talking about fractional set sizes. I'm asking how you know that the
descriptor which describes the size of this set is a number.

Matt

Because that's what a number IS. You have a set of objects, and you ask what the size is. How do you measure this? For finite sets, you COUNT the objects,
and the answer is a NUMBER.

Right. Which 'NUMBER' in particular? I suggest the one at which the count stops (because it has reached the end of the finite set). In the familiar method of counting by reciting a ditty, this answer is thus the last number shouted out.

Right, so generally if there is no well defined end, there is no well defined size.

So, for infinite sets, you want to claim that size
is something OTHER than a number???

Well, the "size" of an unending sequence can't really be the last number you shout (oh, or was it 'sing') from the ditty, can it, since there isn't a last number.

Is that true of all infinite sets? Isn't "1" the last number chanted in the ditty of reals in [0,1]? Of course that's not the size, but if you count by Lil'uns, the last Lil'un is the Big'unth one, and Big'un's the last index dittied.

[Pause while you gibber for a bit]

[Pause with you ditty and doodle your way into the haze...]

> > Pray tell, what kind of a thing IS the size
> > of an infinite set, if not some kind of infinite number? If it's not a number,
> > what is it doing in mathematics? This just seems like a silly question.

> Yes, it probably does to you, but then you have not the tiniest clue
> what mathematics is nor what it is about. Do you think the elements of
> the Klein 4−group are "numbers"?

I am not familiar with the Klein 4−group, but if truth itself is decomposable into numbers, then what isn't? Of course, something like the size of a set is generally considered to mean the number of elements in the set, so Klein or not, set sizes are numbers. I'm not even interested in debating this. It's a matter of mathematical fundamentalism.

> Brian Chandler
> http://imaginatorium.org

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Smiles,

Tony
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