

Re: [EGN] Re: turing completeness

Source: <http://coding.derkeiler.com/Archive/General/comp.programming/2004-02/0575.html>

From: Programmer Dude (*Chris_at_Sonnack.com*)

Date: 02/06/04

Date: Fri, 06 Feb 2004 15:00:27 -0600

Thomas Stegen CES2000 wrote:

>>> *Theoretically, /I/ don't care about atoms OR space. I'm a
>>> Platonist. ;-*)
>>
>> *The math is the reality, eh? (-:*
>>
>> *Too bad it's OT, because I'm an Aristotle-ist, and it would be fun
>> to debate the issue. I must admit, Platonists do have the edge
>> when it comes to many-worlds theories....*
>
> *We could make it on topic by discussing what a computer can
> compute (or if you can program a computer to do any task that
> for example a human can). I am going to try anyways.*

Good luck! I think it's going to be difficult!!

> *First of, I am a sort of a Platonist. I do not quite believe
> in that our observable world is just a reflection of the real
> world without some qualification. I believe (or want to be
> true at least) that everything in the universe can be described
> perfectly by mathematics.*

You do say, "sort of", so you are probably aware that Platonists believe the only reality is the numbers, and the real world is just an (okay, here's sort of a computer-ish bit) "instance" of that mathematics.

(FWIW, I just have a gut sense that mathematics is a purified abstraction of the (messy) real world, rather than the world being a crude instance of the pure math.)

> *Take AI for example. I think it is possible (at least in theory)
> to construct some device that acts like a human thinks like a human
> and for most intents and purposes.*

We were talking about this here not long ago. You may recall that I don't believe that a mind is "just an engineering problem". I

think we will someday build a "brain". I doubt it will turn into a "mind" when we switch it on (but I could well be wrong).

Just jammin' here.... consider a circle. Mathematically it's perfect. In the real world, no such beast as a "true circle" can exist. For one thing, the circle itself has no thickness or height. None.

What if what gives us "mind" from a "brain" involves that perfection? It could mean we can no more create a mind than we could create a perfect circle. (The fly in my oink is that minds do exist, whereas perfect circles do not.... [shrug] or maybe they do, it's just that we can't make'm.)

> *This does challenge the idea of free will,...*

I'm not sure it does. Assume minds exist. Assume free will exists. If we do manage to build a mind, that implies we will build something with free will. If free will doesn't exist, you can stop worrying about it. (–:

Or, maybe that's another reason building a mind isn't possible.

> *(maybe an artificial brain needs to be made up of proper brain material, who knows what effects "brain-material-noise" might have on our thinking process)*

I do think building a brain is just an engineering problem. After all, animals (including us) build them in huge numbers every day. If a physical structure *can* be made, *we* can in theory make one.

> *It is somehow plausible that the entire universe is in fact a computer simulation of some universe.*

I donno about "plausible". I'll take "possible" for \$200, though.

> *If we make the hypothesis that consciousness occurs because we observe that our actions has an affect on ourself.*

(effect) The thread about intelligence ran down without ever really addressing the question: "Define consciousness". But I think we all sorta, kinda have a sense of "what makes us different from animals" (or maybe "different from rocks").

Is there a significant difference between my dog and I? She is aware that *some* actions affect her, but seems oblivious to the effects of others (e.g. will eat the same sort of mushroom that made her very, very sick several times before).

(An oft-cited Gary Larson cartoon is the one showing a huge mammoth felled by a single arrow. One cave man says to the other, "Remember that spot!")

I guess I need more convincing that consciousness *comes* *from* my observing my actions and their effects on me.

- > *If each entity in the simulated universe is modelled by a state*
- > *machine or neural network of sufficient complexity they might*
- > *eventually get into a state where they are aware of how actions*
- > *will affect them.*

An interesting, and even perhaps roughly on-topic, idea. Can a set of hardware and software *achieve* self-awareness without it being programmed in. Software can certainly be made "aware" of hardware by programming now (e.g. Plug n Play).

It almost seems close to the "brain in vat" problem. If we ARE just brains in vats being fed information by scientists (or are being used as Duracells by machines that have taken over the world :-), is it possible to "become aware of The Matrix"? Philosophers have tried to find ways to determine the "brain in vat" problem, but I have yet to see one that's conclusive.

That *suggests* (but comes nowhere near concluding) that becoming self-aware might not be possible.

- > *If this is true (not that the universe is simulated, but that it*
- > *can be) then we can create a program which either has or will*
- > *eventually attain consciousness.*

But quite a leap, isn't it. Consider this, oh Platonist [grin].

If the real world is only a crude approximation of the reality of the numbers, what physical mechanism can possible hope to fully simulate a reality? Doesn't a simulation need to have "meta data"? It seems that meta data would need to be of the next level of reality (the perfect world of numbers, maybe). At the very least, it seems the simulating universe would need to be larger than the simulated one.

But,... I'm still just jammin'.

- > *I'll stop now, if this is on topic enough for you I will be happy*
- > *to continue the discussion. :)*

Well, I'm pretty promiscuous when it comes to topic.... (-:

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