

Re: My claim on Omega's defn

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Daryl McCullough wrote:

> *r.e.s. says...*

>>

>> *"Daryl McCullough" <stevendaryl3016@yahoo.com> wrote ...*

>>

>>> *Finally, define Omega to be the limit as $n \rightarrow \infty$ of $S(n)$.*

>>> *This is the same as*

>>> *Omega = sum over all valid bit strings p of $2^{-\text{length}(p)}$*

>

> *You're right that interpreting Omega as a probability requires*

> *the consideration of infinite bit strings. However, the definition*

> *of Omega can be made in terms limits of finite bit strings.*

I was going to say exactly this to r.e.s. This would be exactly the same thing Cauchy did with calculus.

>> *From a computationalist point of view, that is why Omega has any relevance to our world, because it does not depend on a purely metaphysical (impossible!) idea like the continuum.*

So, the limit itself becomes uncomputable, e.g. *_unreal_*, however as always approximations are possible, which avoids the conceptual duality in Chaitin's monograph.

Consider this like the correct conception of a black-hole. The event-horizon does *_not_* exist, it is only approximated, you can only get this close to such physical limits. (Maybe this was a grossly inappropriate way of making the analogy. Please correct my silly errors) I'd heard that russian physicists were careful enough to make the distinction between a limit and something that actually exists.

In fact, *_everything_* in Chaitin's theory is independent from Cantor's naive set theory or axiomatic set theory, which is why I think it is relevant to foundational "thinking". In a sense, I think the language of AIT and Turing computation comes before, or encompasses more than set theory. Reading his work with this frame of mind is a lot of fun "can I write this whole thing in a constructivist language?".

sci.math: Re: My claim on Omega's defn

Now, I must make the additional claim that, within all computable reals, only Omegas would be random. I find that kind of significant.

As a fun question, I must ask you, given the current estimates for the bounds and particle count of our universe, how long do you think is actual Omega of our universe? How many actually random bits are there here?

Regards,

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Eray Ozkural