

Re: My claim on Omega's defn

Source: <http://sci.tech-archive.net/Archive/sci.logic/2005-02/0253.html>

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Date: 02/02/05

Date: Wed, 02 Feb 2005 22:35:25 GMT

<examachine@gmail.com> wrote ...

- > *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?".*

I was just reading Chaitin's recent article

How Real are Real Numbers? ...

In a footnote, he says this:

"In spite of the fact that most individual real numbers will forever escape us, the notion of an arbitrary real has beautiful mathematical properties and is a concept that helps us to organize and understand the real world. Individual concepts in a theory do not need to have concrete meaning on their own; it is enough if the theory as a whole can be compared with the results of experiments."

That last sentence is interesting, and seems to stand in contrast to a less tolerant version of "digital philosophy".

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

Of course you meant to say "noncomputable reals".

- > *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?*

In some kind of digital model of the observed universe, I suppose that question has an answer — but I don't understand any such model well enough to know.

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—r.e.s.