

## Re: My claim on Omega's defn

**Source:** <http://coding.derkeiler.com/Archive/General/comp.theory/2005-01/1250.html>

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**From:** |-/erc (H\_at\_r.c)

**Date:** 01/31/05

Date: Mon, 31 Jan 2005 09:45:38 +1000

"Arthur Fischer" <arthurfischer@sym.ca> wrote in

> |-/erc wrote:

>>  $\Omega = \sum (p \text{ halts}) 1 / (2^{\text{size}(p)})$

>>

>> [big snip]

>>

>> *Even with infinitesimally small total probability of halting, Omega will not converge and will equal oo.*

>

>

> *You seem to be missing the point that the domain of the universal*

> *self-delimiting TM U is taken to be prefix-free --- ie, the encoding of*

> *halting TMs is such that if x is the encoding of some halting TM, then*

> *no proper prefix of x is a encoding. Basically, any branch of the*

> *infinite-binary tree will contain at most one such encoding, and so to*

> *simply say that there are  $2^n$  encoding with n bits is just being*

> *ignorant. It follows via Kraft's inequality that Chaitin's Omega will*

> *be bounded.*

So all Omega means is there exists 1 program of that size that halts.

What a load of crap, I could design an arbitrary UTM where  $\Omega = 1$ .

It skips 100% of programs without any reason.

Herec