

Re: Evolution is NOT random

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- *From:* Virgil <Virgil@xxxxxxxx>
 - *Date:* Fri, 16 May 2008 13:52:11 -0400 (EDT)
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In article <g0iael\$1uvu\$1@xxxxxxxxxxxxxxxxxxxxxx>, r norman <r_s_norman@xxxxxxxxxxxx> wrote:

On Wed, 14 May 2008 13:44:55 -0400 (EDT), Virgil <Virgil@xxxxxxxx> wrote:

In article <g0cmbb\$1o1o\$1@xxxxxxxxxxxxxxxxxxxxxx>, dkomo <dkomo871@xxxxxxxxxxxx> wrote:

Why do I say this? The only truly random processes in nature are quantum processes and, as far I know, this quantum randomness plays no role in genetic mutations. Mutations are chemical and thermodynamic phenomena taking place in the macroscopic classical world above the quantum realm.

Which of two simultaneous sperm cells to reach an ovum will fertilize it, is certainly an event on a small enough scale so that quantum randomness could occasionally play a role.

Brownian motion is sufficient to explain the randomness, quantum phenomena need not be invoked. Anyone who believes the "classical" world of physics is deterministic does not understand the chaotic nature of the system combined with the finiteness of our observational and computational ability. Even if the philosophers say the classical system is deterministic, there is no way we can use that to predict the future so the world is for all realistic purposes as good as random.

While I quite agree that there are random processes at scales sto large

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for quantum effects to be relevant, my point is that there are events in which quantum effects ARE relevant, despite dkomo's claim to the contrary

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