Re: New Discipline: Synthetic Biology

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From: Anthony Cerrato (*tcerrato_at_optonline.net*)
Date: 10/04/04

Date: Mon, 4 Oct 2004 16:34:47 +0000 (UTC)

"Tim Tyler" <tim@tt1lock.org> wrote in message
news:cjptmt$28c1$1@darwin.ediacara.org...
> *Anthony Cerrato <tcerrato@optonline.net> wrote or quoted:*
> > *"Tim Tyler" <tim@tt1lock.org> wrote in message*
> > > *Anthony Cerrato <tcerrato@optonline.net> wrote or*
quoted:
> > > > *"Tim Tyler" <tim@tt1lock.org> wrote:*
> > > > > *Robert Karl Stonjek <rstonjek@bigpond.net.au>*
wrote or
>
> > > > > > *The potential for synthetic biology | By Pamela*
> > *Silver and Jeffrey Way*
> > > > > >
> > > > > > *? 2003 Nature Publishing Group*
> > > > > >
> > > > > > *Synthetic biology is a new discipline based on*
the
> > > > > > *expectation of a revolution. In the future,*
> > > > > > *bioengineers will create new organisms based on*
the same
> > > > > > *strategies that engineers use to design computer*
chips, bridges,
> > > > > > *and skyscrapers. Mathematical modeling will*
drive
> > > > > > *the design of useful, artificial organisms,*
instead of
> > > > > > *relying on the blind, trial−and−error methods of*
natural selection.
> > > > >
> > > > > *It sounds like artificial life rechristened.*
> > > >
> > > > *I dunno−−depends whether or not there are biologists*
in
> > > > *that bunch or just electronics/computer guys. I do*
like
> > > > *this idea of engineering "synthetic" life in a real*
biological

> > > > *sense.*
>
> *[...]*
>
> > > *Artificial life amounts to the practice of*
``synthetic
> > > *biology'' and, by analogy with synthetic chemistry,*
the attempt to
> > > *recreate biological phenomena in alternative media*
will result in
> > > *not only better theoretical understanding of the*
phenomena under
> > > *study, but also in practical applications of*
biological principles
> > > *in the technology of computer hardware and software,*
mobile robots,
> > > *spacecraft, medicine, nanotechnology, industrial*
fabrication and
> > > *assembly, and other vital engineering projects.''*
> > >
> > > *− Chris Langton's "What is Artificial Life?" essay,*
from:
> > > *http://alife.ccp14.ac.uk/zooland/zooland/*
>
> > *Make no mistake, I am not putting down computer*
simulation
> > *and other techniques in the study of synthetic methods*
of
> > *various kinds (as a rather old retired analytical*
chemist I
> > *am very aware of the power and utility of these*
techniques
> > *in increasing our knowledge and ability to*
duplicate/improve
> > *various real world processes.) I would agree that the*
> > *extension of such techniques to biology may well turn*
out to
> > *be invaluable in ultimately duplicating the Origin of*
Life
> > *process(es) in the lab−−they certainly will be useful in*
> > *studying various aspects of the subject. The only point*
I
> > *was making was the following: if some sequential method*
were
> > *theoretically developed for an OOL process, using*
computer
> > *models for example, and the method was completely*
accepted by
> > *biologists through peer review, no one will completely*
really
> > *believe it until and if it is actually duplicated in*

real world
> > labs. Would you? :))
>
> "Artificial life" was /never/ a term confined to computer
simulations.
>
> It has /always/ been a term that referred to man−made
organisms −
*> of *all* sorts.*
>
> Whether the orginsms in question have been in virtual
worlds,
> made from metal, plastic, silicon, fullerenes, molecular
> nanotechnology − or other material − has never been
specified
> in definitions of the term.
>
> Alife 1 − back in 1987 − had Eric Drexler, Richard
Dawkins, Hans Moravec,
> and A. Graham Cairns−Smith giving talks − those guys are
not computer
> scientists.

Dunno 'bout that. Wikpedia:
http://en.wikipedia.org/wiki/Artificial_life

gives the following statement:

"Artificial life, also known as alife, is the study of life
through
the use of human−made analogs of living systems. Computer
scientist Christopher Langton coined the term in the late
1980s when he held the first "International Conference on
the Synthesis and Simulation of Living Systems" (otherwise
known as Artificial Life I) at the Los Alamos National
Laboratory in 1987."

Note the phrase, "...is the study of life through
the use of human−made analogs of living systems."

This jibes with my readings which have always only discussed
alife in terms of electronic or electromechanical/simulation
or analog techniques, i.e., they do not usually include real
world or lab biology/synthesis, which was what I was
speaking of.

I also note the following definition (which specifically
includes the word, "simulation,") given in: The American
Heritage® Dictionary of the English Language, Fourth Edition

artificial life
n.
The simulation of biological phenomena through the use of computer models, robotics, or biochemistry. Also called Alife.

Regards, ...tonyC

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> _____
> |*im* |*yler* *http://timtyler.org/* *tim@tt1lock.org Remove* lock to reply.
>