Disclosure

of things evolutionists don't want you to know

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Creating Life

Synthetic biology and artificial life have been in the news lately. This month we will look at the difference between them, and what implications they have for the theory of evolution.

We've been following J. Craig Venter's attempts to "create life" for a couple of years. His team has done some really amazing things; but his work has been mischaracterized in the popular press. If you didn't know better, you might think that he has shown how life could have begun accidentally. But, if you read past the misleading headlines, you will see his work proves just the opposite.

The first line of a blog at *Wired.com*, written in 2008 said,

> A team of biologists and chemists is closing in on bringing non-living matter to life. [1]

If you read the rest of the article, you will discover the opening statement of the blog isn't really true. We saved the article anyway, simply because it illustrates how research is being misrepresented; and because it shows what people want to believe to be true.

New Scientist's first issue of this year contained an article titled, "2010 The Year We Create Life?" Since these, and other similar articles, were just speculation about what might happen, we didn't feel they were worth discussing at the time. Now that Venter himself has published something significant in the 21 May 2010 issue of *Science*, the topic is relevant.

It came as no surprise to us that *Time* magazine got it wrong. According to them,

> It's the ultimate science experiment, really — taking a handful of chemicals, mixing them in just the right combination and presto — life!
>
> And after nearly 15 years of such toiling in his labs in Rockville, Md., J. Craig Venter, co-mapper of the human genome, has done just that. Reporting in the journal *Science*, he describes a remarkable experiment in which he and the team at his eponymous institute have pieced together the entire genome of a bacterium and then inserted those genetic instructions into another bacterium. The cell booted up, and life — by nearly any definition — was created. [2]

Venter did not mix up a handful of chemicals that came to life. He did nothing even remotely close to that. He did do something remarkably significant; but he didn't create life.

What he did do was more like building a automobile engine using Ford blueprints, pulling the engine out of a Chevrolet, sticking his Ford-replica engine in the Chevy, and driving away. This is a far cry from creating an automobile by just mixing up a handful of parts and watching them assemble themselves into a car.

> We did not create life from scratch: we transformed existing life into new life. Nor did we design and build a new chromosome from scratch. Rather, using only digitised information, we synthesised a modified version, a copy of the *M. mycoides* genome with 14 of its genes deleted and a "watermark" written in another 5000-plus base pairs. The result is not an "artificial" life form; it is a living, self-

[1] Alexis Madrigal, *Wired*, September 8, 2008, "Biologists on the Verge of Creating New Form of Life", http://www.wired.com/wiredscience/2008/09/biologists-on-t/

[2] Alice Park, *Time*, 20 May 2010, "Scientist Creates Life. That's a Good Thing, Right?", www.time.com/time/health/article/0,8599,1990836,00.html

replicating cell that most microbiologists would find hard to distinguish from the progenitor cell, unless they sequenced its DNA.

It took 15 years to get to this proof-of-concept experiment. And it is just that: proof that it is possible to use a computer and four chemical bases to create a cell with no biological ancestor. Of course, we began by modifying an existing genome. Where else to start? Had we tried a new genome design it wouldn't have worked. Even so, we had 99 failures for every success. [3]

Even though he didn't create life, his research does offer some important insight into life, and what it actually takes to create life. He published a description of what his team did in the *Science Express* portion of the journal *Science*. Here are some excerpts from the 12-page report.

pSynthetic genome assembly strategy

The designed cassettes were generally 1,080 bp with 80-bp overlaps to adjacent cassettes. They were all produced by assembly of chemically synthesized oligonucleotides by Blue Heron; Bothell, Washington. Each cassette was individually synthesized and sequence-verified by the manufacturer.

…

*Assembly of 10-kb synthetic intermediates***.** In the first stage, cassettes and a vector were recombined in yeast and transferred to *E. coli*.

…

*Assembly of 100-kb synthetic intermediates***.** The pooled 10-kb assemblies and their respective cloning vectors were transformed into yeast as above to produce 100-kb assembly intermediates. Our results indicated that these products cannot be stably maintained in *E. coli* so recombined DNA had to be extracted from yeast. Multiplex PCR was performed on selected yeast clones (fig. S3 and table S2).

…

*Complete genome assembly***.** In preparation for the final stage of assembly, it was necessary to isolate microgram quantities of each of the 11 second-stage assemblies. As reported, circular plasmids the size of our second-stage assemblies could be isolated from yeast spheroplasts after an alkaline-lysis procedure. To further purify the 11 assembly intermediates, they were exonuclease-treated and passed through an anion-exchange column. A small fraction of the total plasmid DNA (1/100th) was digested with Not I and analyzed by field-inversion gel electrophoresis (FIGE) (Fig. 2c). This method produced ~1 µg of each assembly per 400 ml yeast culture (~1011 cells). [4]

In plain English, here's what they did: They needed to create a DNA molecule that was over 1 million base pairs long. (A DNA molecule is a twisted pair of long strings of four different kinds of molecules called bases. It looks like a twisted ladder. Each rung of the ladder is made from a pair of bases.)

They made this long DNA molecule by putting together smaller segments of commercially available DNA which they purchased from Blue Heron. They purchased pieces that were about 1,000 base pairs long and joined ten of them together to form pieces that were about 10,000 base pairs long. They took ten of these 10,000 base pair pieces and joined them together to form pieces about 100,000 base pairs long. Finally, they joined eleven of these 100,000 base pair pieces together to form the complete molecule.

What kind of a machine did they use to do this assembly, you might ask? They used living yeast, but it wasn't easy.

> We cloned 11 overlapping natural 100-kb assemblies in yeast by using a previously described method. [5]

Let's pause a moment to reflect upon that. American public school science classes are required to teach students that there is some speculative environment in which amino acids form naturally. These amino acids combine to form more complex organic molecules through unknown chemical reactions. The final result is a complete cell, which somehow comes to life. That's what happens, in theory.

In practice, however, there are no undirected chemical reactions that will do this. That's why Venter had to coerce a living organism (yeast) to assemble the DNA fragments into a functional piece of DNA.

It's Natural?

So, we ask, "Was the artificial life formed by a natural process?" That all depends upon what "natural" means.

If we are talking about natural as opposed to supernatural, there is nothing supernatural about yeast producing DNA. There's no magic involved when plants or animals produce sugars or fats to store energy. There's no magic involved when plants or animals break down sugars or fats to

[3] *New Scientist*, 25 May 2010, "Synthetic genomics: where next?, page 3, http://www.newscientist.com/article/mg20627621.600-venter-the-implications-of-our-synthetic-cell.html

[4] *Science Express*, http://www.sciencemag.org/cgi/rapidpdf/science.1190719v1.pdf

[5] *ibid.*

produce energy. As marvelous as this is, no physical laws are broken when this happens.

Physical laws aren't broken when one builds a house, car, or computer. There's nothing supernatural, magic, or miraculous about building these things (although, Alexander Graham Bell might consider the iPhone to be miraculous if he were alive today ☺). Despite the fact that there is no magic involved, a house, car, or computer isn't the result of a "natural process." It is the result of conscious design.

When lightning strikes a tree and starts a forest fire—that's what we call a natural process. The flow of electrons in the lightning is the result of undirected electromagnetic attraction. The reaction between the wood and the air is a natural result of the heat produced. It's all about physics and chemistry, AND NOTHING MORE.

When one builds a house, car, or computer, everything is done according to known laws of physics and chemistry, too. The difference between a forest fire and building a house is how those laws are controlled. In a forest fire, the laws of physics and chemistry are uncontrolled. When building a house, someone controls where force is applied to the nails that hold the walls together.

Whether the laws of physics and chemistry are directed or undirected determines if a process can truly be called "natural" or not.

Life Involves Control

So, we come back to the process of yeast assembling DNA. Is that a "natural" process? No, it isn't, by the definition given above.

Although yeast isn't conscious, the yeast does assemble the DNA on purpose. If the yeast dies, it won't assemble the DNA.

We are getting dangerously close to some really deep metaphysical questions about what life really is; so let's stop barely short of going there. Let's just say that there is something different between a living yeast cell and a dead yeast cell. If there weren't, we could not distinguish between a living cell and a dead cell, even though they are chemically and physically identical.

What is life? We don't know. We only know that there is a difference between a living cell and a dead cell. Venter had to use live yeast to build the DNA. Of course, Venter himself is alive. Venter's conscious will, combined with Venter's knowledge of the sequences of bases he wanted to produce, combined with purchased organic chemicals built to rigid specifications, combined by living yeast, produced the DNA he desired. Pre-existing life was a necessary component of the process. Without life there would have been no will, no knowledge, and no ability to combine the materials in the necessary fashion.

This confirms the fact that life comes only from life. Life needs DNA; and there isn't any way to produce DNA without pre-existing life being involved.

What Venter did was nothing like "taking a handful of chemicals, mixing them in just the right combination and presto — life!" But he still wasn't done.

The Next Step

After they built the DNA in the yeast, they still had to move it to the target cell.

> However, initial attempts to extract the *M. mycoides* genome from yeast and transplant it into *M. capricolum* failed. We discovered that the donor and recipient mycoplasmas share a common restriction system. The donor genome was methylated in the native *M. mycoides* cells and was therefore protected against restriction during the transplantation from a native donor cell. However, the bacterial genomes grown in yeast are unmethylated and so are not protected from the single restriction system of the recipient cell. We were able to overcome this restriction barrier by methylating the donor DNA with purified methylases or crude *M. mycoides* or *M. capricolum* extracts, or by simply disrupting the recipient cell's restriction system. [6]

If you try to put an American engine in a European car, you will probably run into trouble because American engines use bolts measured in inches, and European cars use metric bolts; but a clever mechanic can work around that problem. Venter's team ran into a methylated/unmethylated incompatibility, but they solved it.

Then, there was another problem.

> Initially, an error-containing 811-820 clone was used to produce a synthetic genome that did not transplant. This was expected since the error was a single base pair deletion that creates a frameshift in *dnaA*, an essential gene for chromosomal replication. We were previously unaware of this mutation. By using a semi-synthetic genome construction strategy, we were able to pinpoint 811-900 as the source for failed synthetic transplantation experiments. Thus, we began to reassemble an error-free 811-900 assembly, which was used to produce the sMmYCp235 yeast strain. The *dnaA*mutated genome only differs by one nucleotide from the

[6] *ibid.*

synthetic genome in sMmYCp235. This genome served as a negative control in our transplantation experiments. The *dnaA* mutation was also repaired at the 811-900 level by genome engineering in yeast. A repaired 811-900 assembly was used in a final stage assembly to produce a yeast clone with a repaired genome. [7]

The DNA they created is over 1 million base pairs long. But they accidentally left out just one base pair, which was enough to prevent the DNA from working properly. This illustrates the point that not just any DNA molecule will do. It has to be the right DNA molecule. You may have been frustrated trying to get a gasoline lawn mower to start when the spark plug gap wasn't just right, or the fuel was too rich or too lean. Getting the DNA molecule adjusted just right is a lot more difficult than adjusting a lawn mower engine.

A Software Upgrade

You can think of a cell as a computer, and the DNA is its software. The computer won't run without software. Software doesn't do anything unless it is loaded into a computer. What Venter actually did was to change the software in an existing cell. He didn't build the cell.

Does this mean they created life?

No. The team made the new genome out of DNA sequences that had initially been made by a machine, but bacteria and yeast cells were used to stitch it together and duplicate it. The cell into which the synthetic genome was then transplanted contained its own proteins, lipids and other molecules. Until the host cell is itself built artificially from scratch it cannot be said that life has been created. [8]

Ida and Luca

Now that you know the truth about how hard it is to create a living cell (in practice), let's compare that with the stories about how easy it is for a living cell to form spontaneously (in theory). Here's what "scientists say" about the Initial Darwinian Ancestor (Ida) and the Last Universal Common Ancestor (Luca).

IN THE beginning there were Ida and Luca. The initial Darwinian ancestor - Ida - and the last universal common ancestor - Luca - assembled themselves from the spare parts sloshing around on the early Earth. Once all the ingredients were in place, it looks like life was all but inevitable.

The finding comes from recent discoveries about the behaviour of chemicals thought to have been present on the primordial Earth, relating to two key stages in the evolution of life. Ida was the first molecule that was able to self-replicate. Once it was around, busy making copies of itself, it somehow evolved the ability to store information in the form of the genetic code. That led to the life form from which we all descended: Luca. [9]

If Venter had known that chemicals thought to have been present on the primordial earth just naturally form a self-replicating molecule, he could have saved fifteen years of labor! ☺ After presenting a ridiculously naïve argument by Michael Yarus of the University of Colorado at Boulder, the article concludes,

This suggests that if there were cyclic nucleotides in the primordial soup, there was no need for a catalyst, says [Nick] Lane [of University College London]. Given the right ingredients, the first self-replicating life forms would have essentially booted themselves up. "Cyclic nucleotides are just as likely to occur in these primordial environments as any other nucleotides," he says.

For Lane, these reactions in all probability happened around the piping hot black smokers of the oceanic abyss, where the Earth's crust is wrenched apart by immense geological forces. "In environments like hydrothermal vents it is likely, but as yet experimentally unproven, that a range of amino acids and nucleotides would be formed by the laws of chemistry," he says. Local currents, he adds, would probably draw the molecules together, making it more likely that self-replicating chains of RNA could form and associate with amino acids.

Once that happened, the emergence of life was all but inevitable. "The Darwinian game was fully on," says Yarus. [10]

Their motto must be, "Never let the facts get in the way of a good story." Real scientists, like Venter, are doing useful work in the area of synthetic biology. Lane and Yaris are telling nonsense stories in order to give the crumbling theory of evolution some credibility.

Synthetic Biology

There are some common misconceptions about artificial life and synthetic biology.

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[7] *ibid.*

[8] *New Scientist*, 29 May 2010, How the Synthetic Bacterium Was Made, page 7

[9] Brahic, *New Scientist*, 24 April 2010, "Life was all but inevitable", pages 6-7, http://www.newscientist.com/article/mg20627573.900-selfstarter-life-got-going-all-on-its-own.html

[10] *ibid.*

> A scientist adds a few chemical compounds to a bubbling beaker and gives it a swirl. Subtle reactions occur, and, lo and behold, a new life-form assembles itself, ready to go forth and prosper. Such is the [erroneous] popular imagining of synthetic biology, or life created in the lab.
>
> …
>
> Synthetic biology, in fact, is all about bringing the principles of large-scale engineering to biology. Imagine … trees that exude diesel fuel from their stems. Or biological systems that are reengineered to remove pollution or to thrive in a changing climate. Reprogrammed bacteria might even be able to invade our bodies to heal, acting as an army of living doctors inside us. … "In principle, everything that is manufactured could be manufactured with biology," [George M.] Church [of Harvard Medical School] argues. It is already happening on a small scale: enzymes from high-temperature microbes used in laundry detergent have been reengineered to perform in cold water, thereby saving energy. [11]

Synthetic biology is all about engineering and design. It has nothing to do with how life could have begun accidentally.

The Lesson

If we learn nothing else from Venter's work, we should learn this: It is very hard to create a living thing. It takes tremendous effort just to create new DNA to transplant into an existing, living cell. It could not have happened as simply and accidentally and inevitably as some people would like you to believe.

Email

Discussions with Evolutionists

Mick learned more about evolutionists than about evolution in his discussions with them.

We received this email from Mick.

Subj: Unexpected outcome of research
Hello SAGE
I started to research into evolution a few years ago, having decided it was time to stop taking everyone's word for it and find out for myself. Instead of anything observable in real life or under controlled test conditions, I found out that every new generation is a copy of the one before, with never any variation that could add up to the ones claimed by evolutionists. Single-cells are always a copy of the generation before, making the jump to multi-cells impossible.

I also noticed the following behaviours from evolutionists in discussions:
§ The insistence that there is no need to provide proof for evolution but demanding proof for creation or ID. That's hypocrisy, so is accusing others of being what they are themselves.
§ The belief that evolutionists/atheists are better than anyone else. That's excessive self-worth.
§ Uncontrolled anger.
§ Exaggerations of the truth into a big statement that contains only a small amount of anything truthful. That's consistent with pathological liars, along with the conviction that they are telling the whole truth.
§ The use of insults to put down anyone who disagrees. That's a form of mental cruelty/bullying.
§ Refusal to answer simple questions, including making up answers that are not based on any reality; adjusting what is said to keep the appearance of truthfulness; changing the subject and keeping silent - another symptom of a pathological liar.
§ Changing the rules to suit themselves, even to the point of self-contradiction within minutes.
Further research has shown me that the above behaviours can be symptomatic of somebody with Anti-social Personality Disorder, AKA sociopath, AKA psychopath in it's [*sic*] extreme.
I wonder if any evolutionists can rebut that without showing themselves to have those behaviour patterns, behaviours that are shared by many religious maniacs.
It is also known that the atheist Soviet Union and Chinese leaders killed millions more folk than the Inquisition. Hitler used evolutionary theory to justify the holocaust during the War, and the killing of sick and disabled children before it. The death camps were first built to dispose of such children.
There will be an excuse for all that, I have no doubt, if any answer to it is at all forthcoming. I would be surprised if any atheist is willing to condemn those leaders for killing, imprisoning and torturing in the name of atheism.
Best regards
Mick

We are glad that Mick has done his own research, rather than depending upon us to tell him what is true. We have observed the same behaviors in America as the behaviours he observed in the British Empire; but we do not believe these behaviors are evidence of mental disorders. We think this irrational behavior is simply the result of reason being overruled by emotion.

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You are also permitted (even encouraged) to send a donation of $15/year to Science Against Evolution, P.O. Box 923, Ridgecrest, CA 93556-0923, to help us in our work. ☺

[11] *ibid.*

by Lothar Janetzko

Origin of Life

http://www.newworldencyclopedia.org/entry/Origin_of_life

New World Encyclopedia – Organizing knowledge for happiness, prosperity, and world peace

This month's web site review looks at an article found in the New World Encyclopedia. The introduction to the article states that "it focuses on modern scientific research on the origin of life on Earth, rather than religious belief, creation myths, or the specific concept of spontaneous generation." The article begins by presenting a brief discussion of abiogenesis, the generation of life from non-living matter, and dismisses the classical notions of abiogenesis that are now known as spontaneous generation. It points out that today abiogenesis refers primarily to the hypotheses about the chemical origin of life.

It is interesting to note that the article points out that the various scientific models being proposed for the origin of life are necessarily speculative. "Proposals for the origin of life remain at the stage of hypotheses, meaning they are working assumptions for scientists researching how life began. If test results provide sufficient support for acceptance of a hypothesis, then that is the point at which it would become a theory."

After this introduction, the article provides a table of contents with links to the following topics: 1) Spontaneous generation, 2) History of the concept of the origin of life in science, 3) Current models, 3.1) Origin of organic molecules, 3.2) From organic molecules to protocells, 4) Other models, 4.1) Autocatalysis, 4.2) Clay theory, 4.3) "Deep-hot biosphere" model of Gold, 4.4) "Primitive" extraterrestrial life, 4.5) The Lipid World, 5) References and 6) Credits.

There is much to explore in this New World Encyclopedia article. You must understand however that "a few facts give insight into the conditions in which life may have emerged, but the mechanisms by which non-life became life are still elusive."

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