JCVI "synthetic life "in perspective

1, The synthetic cell contains synthetic manufactured DNA but original genetic code

The original code of *Mycoplasma mycoides* was digitised and syntbethtic DNA was produce according to the original genetic code's instructions.

Although these experiments do not create natural organisms,the parents of these cloned organisms could be fairly simply described as the DNA donors and the synthetic cells as the DNA recipients of their their parents.

Note that the computer was only used, passively, to store genome sequence information. It did not generate a single molecule necessary for the survival or arrival of *M. mycoides JCVI-syn 1.0* cells. Therefore, Dr. J. Craig Venter's claim that his group had created "the first self-replicating species we've had on the planet whose parent is a computer"1 is misleading

Thus, an argument can be made that the fact that the starting natural cells and the final synthetic cells could not be distinguished without the inclusion of the watermarks demonstrates that the cells do not actually have computers for parents.

The second argument against the idea that the *M. mycoides JCVI-syn1.0* cells' parent was a computer is the fact that the cells could not be created without the help of four different organisms: humans, *E. coli,* yeast, and *M. capricolum* The real *M. mycoides JCVI-syn1.0* genomic DNA was synthesized by E. coli, yeast, and M. capricolum, each using its own existing DNA replication machinery, except the initial 1080bp cassettes, which were chemically synthesized by humans.

file:///C:/Users/Johan/Downloads/94-662-1-PB.pdf

2 The synthetic minimal cell actually contains the minimal number of the genes necessary to keep *M mycoides* going.

The base sequence of the remaining genes in *JCVI- syn 3.0* are exactly the same as the comparable genes in *M mycoides*.
Using the first synthetic cell, *Mycoplasma mycoides JCVI-syn1.0* (built by this same team in 2010), *JCVI-syn3.0* was developed through a design, build, and test (DBT) process using genes from *JCVI-syn1.0*. The new minimal synthetic cell contains only 531,000 base pairs and just 473 genes making it the smallest genome of any self-replicating organism

A biological cell is very much like a computer—the genome is the software that encodes the instructions of the cell and the cellular machinery is the hardware that interprets and runs the

genome software. Major advances in DNA technologies have made it possible for biologists to now behave as software engineers,