

The Chance of Chance: Don't Bet Your Life on It.

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Adapted from the book, *Signature in the Cell*, by Stephen C. Meyer

Remember from biology class something called the Miller-Urey experiment performed in 1953? It was shown as proof that the combination of a “primordial soup” of certain elements and some electricity, amino acids could be created. This idea was the best shot for the materialist to prove life could come from random chemical processes given the right environment and enough time – no God required. Because the experiment did produce some amino acids, for decades it was taught as “scientific” that naturally generated amino acids would join to become proteins; proteins would arrange to become cells; cells would become tissues; tissues would become full bodies and – presto! - life would inevitably arise.

It was all garbage.

Why? The ingredients of the primordial soup were wrong, the types of amino acids formed were wrong, none of the natural counteractive processes were permitted to do their work, and a hundred other simultaneous considerations were ignored. Oh yes, entropy (a.k.a. the pesky, ever-present Second Law of Thermodynamics), which causes everything to die from heat loss and disorder, was excluded as well.

Not to worry. After propagandizing the youth for forty years, the experts finally admitted that they perhaps, maybe, not so much, weren't exactly correct. Their pseudo-admission of error, was immediately followed by the foreseeable, “Yes, but.” Yes, but if we change this...tweak that...adjust for this...then it could still be possible that life came from random processes over billions of years from matter that came from who knows where (another theory-destroying problem conveniently set aside). You have to hand it to them though, you just can't keep a good never-God expert down for long. Yeah but, surely science has shown by now that God does not exist. Right? No, not right. The more scientists learn about the true nature of life and the make-up of the universe, the problems grow even worse for the materialist – much, much worse.

For arguments sake, let's pretend you could get the proper type and number of amino acids from a primordial/prebiotic soup. And these amino acids would form into proteins, then cells, then tissues, then bodies and – presto! – life. How likely would it be? What are the odds? Good news, some brainy types have already figured this out.

Here is what you would need to know:

- What is the minimum number of amino acids required for an average functional protein (the kind of proteins that do jobs inside all cells)? Answer: 150
- How many functional proteins are required within a basic cell? Answer: 250

As you will soon see, there is no need to go beyond this amount of calculation. It would simply be excessive celebration by Team Reason. And that is unsportsmanlike. In the battle for the answer to the origin of life, *Reason*, will have forced *Random* to tap out early in the first round.

So, ding-ding, here we go:

- The probability of bonding 150 amino acids to make a protein = 1 in 10^{45}
- The probability of incorporating only left-handed amino acids in said protein (the kind found in living cells) = 1 in 10^{45}
- The probability of achieving the correct amino-acid arrangement for the protein = 1 in 10^{74}

Taking just these three probabilities means that the odds of getting - by chance - even one functional protein of modest length (150 amino acids) from a prebiotic soup is no better than 1 chance in 10^{164} (multiply the separate probabilities by adding their exponents: $1 \text{ in } 10^{45+45+74} = 1 \text{ in } 10^{164}$).

But wait, that is just the start of round one. A single protein does nothing. You need a cell. A minimally complex cell requires at least 250 of these functional proteins. So, what is that probability?

To find out, multiply the probability of the single protein (1 in 10^{164}) by itself, 250 times (164×250).

Answer: 1 in $10^{41,000}$

This number is incomprehensibly large.

Let's put it into perspective. Here are some other numbers that may help:

- The total number of atoms in our galaxy is 1×10^{65}
- The total number of protons, electrons, and neutrons in the observable universe is 1×10^{80}
- Since the Big Bang, the total number of seconds that have passed is 1×10^{16}
- The maximum number of physical interactions that can occur in any given second (using speed of light, Planck length and other considerations) is 1×10^{43}
- How about the total number of physical interactions that have ever happened ever? What is that number? To find out take the last three numbers I just mentioned: the number of elementary particles (1×10^{80}), the number of seconds since the Big Bang (1×10^{16}), and the number of possible interactions per second (1×10^{43}). Multiply these three numbers together and you get 1×10^{139}

Let's break this down a little to see what it all means.

This means by chance alone, it is a trillion, trillion, trillion, trillion, trillion, trillion, trillion times easier to pick a single specified particle from among all the particles in the universe than it is to randomly generate a single functional protein...just the protein, not the full suite of proteins required.

This means by chance alone, the random formation of a single functional protein (1×10^{164}) is more than twenty-four orders of magnitude - a trillion, trillion, times more - than all the possible interactions in the universe since it began (1×10^{139}).

This means that the material necessary (probabilistic resources) for protein making, and the time necessary to make just one protein, are far in excess of what would have been available throughout the

entire history of the earth. There simply hasn't been enough time or sufficient resources, not even close. It would be like baking a cake from start to finish in the blink of an eye without any flour.

This means that the probability of the formation of a functional protein (1×10^{139}) and all the other numbers, as massive as they are, are dwarfed by the probability of the formation of the full suite of proteins required for one complete cell to randomly come about (1×10^{41000}). This is like baking a cake in the blink of an eye without flour, or utensils, or a kitchen. Now, include a dash of the Second Law of Thermodynamics throughout the 4.6 billion years, which we have left out so far, and you might as well bake your split-second cake while standing in a tornado. Sound plausible? It shouldn't.

Sadly, we all know that there are far too many of those who still cling to these insurmountable probabilities. They are willfully deceived, allowing the inner voice of imagination to drown out the voice of reason. For them, no amount of evidence will matter. This is tragic, because protein formation was just the beginning.

I won't go into any more probabilities, but you should know that the cell is full of a super-abundance of adaptive and health-maintaining mechanisms. If you were to see inside just one of your 100 trillion cells you would find a factory-like world of molecular machines with engineering names like molecular motors, propellers, switches, shuttles, nanocars, balances, tweezers, sensors, gates, assemblers, and hinges.

Many of the molecular machines essential to life are smaller than the wavelength of light. This means they cannot be seen even with an electron microscope. Instead, indirect measurements and methods are used to know that they exist and what they are up to. Just how many machines are there per cell? Researchers don't know for sure, but their conservative estimates are in the billions...per cell! The formation of these astounding and essential features within every living cell (and there are many more) were not included in the probabilities calculated above. It was just too much. Our minds cannot fully grasp what we already know to be present within. Complexity is stacked upon complexity.

In conclusion, with the parameters presented above, the theory of random protein formation has been given its best hope of success. The numbers are as generous as they can be toward the pool of resources required to make a single protein, and as conservative as they can be regarding the size of that single protein (150 amino acids in length). Also, a vast number of additional cellular requirements were not factored in. This was done knowing that all of the physical interactions from the start of the universe were not strictly devoted to producing combinations of amino acids in a prebiotic soup, and knowing that many essential proteins in a living cell are twenty times longer than this simplest of examples.

So, if you claim to believe in science, is it reasonable to cling to an idea that science has shown to be a statistically impossible? Should this same idea be perpetually advertised as truth to young developing minds? Rather, is it not prudent to stop gambling the present and future on something that never happened in the past?

Ladies and Gentlemen, we have a winner. The match between *Random* and *Reason* is over. *Science* has stepped in and stopped the fight. *Reason* is still the undisputed champ. And he declares that you are not meaningless star dust assembled over time. You have been purposefully designed.