Ian Corcoran
Genetics Biol294
Professor Reinhart-Kim
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Assignment 5

I found an article on The Virginian Pilot that really piqued my interest. The article is titled, "Scientists finally finish decoding entire human genome." This article interested me because I thought the human genome had already been completely decoded a couple different times. The team who completed the decoding of the human genome describes the genome as, "The set of instructions to build and sustain a human being." The Human Genome Project started in 1990 and was officially ended in 2003. However, since then more discoveries about the human genome have been made and it was estimated approximately 8% of the human genome remained coded. That was until Professor Evan Eichler from the University of Washington found there was still coded regions in between the genome that humans have missed (The Virginian-Pilot, 2022).

The complete decoding of the human genome will allow us to fully understand what makes us entirely human. Certain disorders like down syndrome and Huntington's disease can be targeted for treatment or possibly even elimination from the genome before birth through gene editing (Doudna, 2014). My first question was, how could so many scientists agree that the genome is complete when it really is not? Well, I believe the best explanation is a mash up of human error and technological issues. The technology in the early 1990's is almost ancient compared the technology of today, so it could be very easy to miss the extra genomes. Also, the genomes that were missed were thought of as extra space or just unimportant.

Perhaps the most interesting part about this article is exactly how they went about decoding the information. In short, the human genome must be cut into strips hundreds of thousands of letters long and fed through a machine that can decipher the code (The Virginian-Pilot, 2022). However, the genome is difficult to decode because of the mix of information between the male and female's genes. To get past this fault, the scientist found a gene that has only the male's chromosomes. Having a single parents gene makes it significantly easier to properly organize the code.

I also found many other articles discussing the completion of the human genome. According to a review article on science.org, the final 8% was finally decoded and has introduced nearly 200 billion new base pairs of sequences and nearly 100 of those are predicted to be protein coding (Nurk, 2022). Another interesting bit of information from the review article is the genes were decoded using a Telomere-to-Telomere (T2T) Consortium. This Telomere-to-Telomere Consortium greatly reduces the gaps in the decoding process which is what allowed the final 8% to be decoded.

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