A polymerase chain reaction – along with a short history of how it came into being.

When it comes to open source hardware, my heart starts jumping.

With the current Coronavirus pandemic, it so happened that I searched for a cheap open source qPCR machine, while thinking of ways to try help alleviate load off the worldwide lab testing facilities, and perhaps try pocket a few bucks in the process as well. (More on this later*)

In the process I also had to revise how quantitative (real time) PCR works, I read about SYBR Green, it's improvements, the TaqMan Probe methods and a few other genetic investigation terms and jargon.

I was awestruck to realize just once again how far we have come with technology in the last 10 years. We, as humans have evolved as a species with the capabilities to survive biological insults far better than we might have thought we ever could – or perhaps I thought we ever would. We have developed our communication capabilities to near-superb of what is possible within the laws of physics and chemistry along with the help of machines. What's even better, we are almost becoming capable of understanding these laws so well that we are likely to start bending them soon, evidenced by the birth of a few CRISPR-babies in China quite recently which are presumed to be immune to HIV and the birth of nuclear physics some while longer ago.

We have developed our skills on all levels to such an extent that we preempt risks, and plan ahead to survive what nature thus far has thrown at us.

Along with this is the technology that developed called qPCR. This is the technology which developed from PCR (polymerase chain reaction). It is a technique that revolutionized the understanding and the central dogma of life as we know it. Biology will forever be transformed, because along with PCR came the ability to study genes at a rapid rate. This was one of the reasons why the Human Genome Project was completed almost 10 years before we thought such an (almost impossible) task would have been able to be completed by us as humans. And what did we do? We built machines to do the work for us- Computers.

We built machines just like our ancestors did. We are where we are because we have the ability to make machines work for us and we have the ability to communicate and stand together. Like most of history, when we stand together, work together and well, probably not necessarily physically right now, but figuratively, hold hands together, we will survive.

May this time in the history of the earth, and it feels damn daunting, be a time in which you have a bit more grace upon your fellow human being. Understand that not everyone will be on the same page as you, not everyone will have the knowledge you have. Not everyone will have the capabilities you have and certainly not everyone will have the same chance of surviving that you have. For some this will be more daunting than others. For some the only thing that matters will be wiping their arses, but for others, it so happens that their fear is that the loaf of bread that they can actually afford today from the small market near the farm where they live, might have been touched by the guy who recently traveled on his holiday trip to Italy.

It may seem to you absurd that things have been cancelled left, right and center, but I tell you, it will be worth it in the end. May you respect life in this time.

Play along, abide by the rules. The world does not belong to

you. It belongs to all of us.

*And as I sometimes get these thoughts of making money and “excelling” in life, it is simple thoughts that often brings one back to earth, like the voice of a layman guy on the radio, expressing his worries over a loaf of bread. And for some reason I think of Ronald’s cup in the office, which reads:

Don’t be a doos. Just be “lekker”.