Alan Turing – Breaker of the Unbreakable

Our world today would be very different without Alan Turing. We use GPS to find our way, we use Google when we don't know the answer to something and we can work anywhere in the world with a PC. We owe a lot of these technological advancements to Turing. Turing created the concept of a computer. Unfortunately he did not survive to see his world-changing legacy occur. Perhaps the most exciting and Hollywood-esque of his achievements was the breaking of the Enigma.

An incredibly driven genius, Alan would work for hours on end, without distraction to solve a problem, whether in the field of advanced mathematics or quantum physics. I find myself almost jealous of his ability to focus so hard on something and to work at it without stopping until he completed his task. This is clear after his conviction and subsequent chemical castration for "acts of indecency and homosexuality". He continued working despite this hardship.

His work was undoubtedly inspired by his late childhood friend Christopher, who helped Alan to grow and become successful. His devastation at the loss of his friend led him to develop a deep fascination with the mind and brain, and how computing mimics it. At just 24 he published what is now seen as the foundation of modern computing where he analysed how a task is completed by following a definitive method. He invented a Universal Machine that can decode and perform any set of commands. This concept would later form the basis for his electronic computer design, that could similarly decode and perform any set of instructions.

After the outbreak of the war, he joined the fight against Nazism with his own expertise; code-breaking and ciphers. He was instrumental in the development of the Bombe machine, capable of breaking coded Nazi communications; perhaps even winning the war. It never fails to impress me no matter how many times I look through his timeline of achievements. Especially given how young he was; a science prodigy from a very early age.

Later in the war, he found himself at the National Physics Laboratory building what he described as an "electronic brain". This was a computer capable of storing programs in memory. Unfortunately, he was not present to finish the building of the ACE computer as his relationship with administration at the NPL was soured by delays in the implementation of his design and he became

disillusioned. It seems he was a man who needed to work at his own pace. Alan chose to take a sabbatical to his alma mater of Cambridge where he wrote about artificial intelligence and designed an experiment known as the Turing Test, his attempt at testing the human-like intelligence of a machine. He defined an intelligent machine as one which in conversation with a human interrogator, could not be told apart from another human. This is a lasting contribution to the field of artificial intelligence, and an impressive legacy on its own, even disregarding his previous work.

In 2014, the Queen announced that Alan Turing was posthumously pardoned for his convictions. It was a long time coming, I will say. His legacy is now untainted by an archaic conviction, and he is remembered as a national hero in the UK for his war effort, and globally as the father of computing. His work changed the world as we know it.