Genetic Modification: Are You For Or Against

Imagine being given the choice of formatting your own child, just the way you want it. No such thing as wondering what the gender of the baby is until 18 to 20 weeks. You can go ahead and choose it yourself. *Genetic engineering, otherwise known as genetic modification, is the direct manipulation of an organism's genes using biotechnology. As of now, scientists have made it possible for an embryo to be genetically altered – whether the intention is to alleviate a certain medical condition, or for enhancements and cosmetic purposes. *This advancement can now allow parents to format their own offspring – designer babies, even – you can change their eye colour, their hair colour, even their gender. So what does this mean for the future?

*64% in the US & over 82% of people in China support genetic modification to help treat diseases. Cosmetic genetic modification is far more controversial with only 39% of people in the US finding it agreeable. Fewer support modifying the genes of babies before they are born. *Chinese researcher, Dr. He Jiankui announced the birth of two twins in November of 2018 that had been genetically-edited. Jiankui used CRISPR/Cas9, a powerful gene-editing technology, and performed a germline genetic modification - the most consequential type. Prohibited by law in more than 40 countries and by a binding international treaty of the Council of Europe, it has been recognised as a somewhat dangerous advancement of technology. *Any alterations made would appear in every cell of the person who developed from the gamete or embryo, and in all subsequent generations. Jiankui used this type of modification to alleviate a medical condition (making the twins HIV immune), but if it is used for enhancement or cosmetic purposes it could unravel to a whole new market-based form of eugenics. *"Calling children 'designer babies' is wrong…a child is not something to design. If we can help these parents protect their children, it's inhuman for us not to. We've reflected deeply about helping these families. We believe ethics are on our side of history." * Ever since Dr. He attended the Hong Kong summit he has not been seen or heard from, which has led to speculation that he has been detained. HK media reported that the university president personally escorted him back to Shenzhen. The Chinese Government has initiated a full investigation into Jiankui and his research, so is it wrong to infer that something's suspicious after his disappearance?

*The genetic difference between any two people on the earth is less than 1% - something quite shocking as we're all vastly different from our own perspectives. Wouldn't you say that's what makes us unique? Genetic freedom is the most basic human right we all should have. That tiny percentage is what makes us different from the rest of the world. *One individual who is constantly pushing the boundaries of science outside traditional environments is Dr. Josiah Zayner. He performed the first successful cosmetic human genetic modification by injecting the gene that makes jelly-fish light up in his own skin. After he sent a chunk of his skin to a biotech company for analysis it confirmed that the gene had taken hold in his cells. *However, a study of CRISPR recommends that we shouldn't rush into trying out genome editing inside people's bodies just yet. It can cause large deletions or rearrangements of DNA, says Allan Bradley of the Wellcome Sanger Institute. "There's a risk of causing cancer sometime in a patient's lifetime… We need to understand more before rushing into human clinical trials." One of the concerns with CRISPR is if it is intentionally misused, or even that people with good intentions will inadvertently cause harm.

*Lebensborn - 1935. A state-supported genetic engineering programme in Nazi Germany with the objective of increasing the birth rate of “Aryan” children with individuals classified as “racially pure and healthy” based on Nazi racial hygiene and health ideology. Any of the children born that didn’t meet the standards of the “Aryan” people were killed off. This “master race” - Hitler’s little experiment - continued to embody a traumatic episode in 20th century history throughout their lives and were constantly ridiculed by society. Hitler’s philosophy about the Aryan race was augmented by forcibly removing children with Aryan characteristics from their homes to indoctrinate to his “master plan”. *Folker Heinecke was only two years old when he was kidnapped, and to this day he still does not remember his real name. Sixty-four years after he was kidnapped, sixty-four years of confusion, mystery, rejection – he still continues in his search. Kikki Skjermo, stigmatised as a “Nazi child” throughout her youth, found her biological mother later in life - though claims that she also met a “wall of coldness” – saying that “she only touched me once, gently on the nose”. *Having to live with this feeling of deep uncertainty about your identity, just to find one of the strongest links to who you are, one of the strongest links to where you came from, and they barely acknowledge you. These individuals faced pitiless discrimination and were frequently harassed and beaten throughout their lives, yet why did I not have any prior knowledge of this? As George Santayana said, is it not true that those who do not remember the past are condemned to repeat it?

*Historical eugenic experiments have resulted in thousands of innocent lives taken away due to the sickening “standards” that were set – yet shouldn’t that ring alarm bells in our heads? We are the future for this world, and we need to make the right decisions. Whether that is to take a risk and allow cosmetic genetic modification to unravel into whole new market-based form of eugenics, or to save lives - not just looks - with this technological advancement. The 1% separating us from being the same is the most basic human right we all should have. Do we really want to see our future children as some sort of customisable product? Do we really want to go that step further, just to mess with Mother Nature? This is where the line is drawn. Which side are you on?