

Should genetic engineering or human cloning be used to create designer babies? - Patrick Dixon is a keynote speaker, writer and broadcaster on the future of health care, biotech and pharma.

Every parent wants a perfect child - but what happens when a parent wants a designer child - a child built to order, a pedigree child, a super-breed, super-human or just a baby with higher intelligence?

Sex selection is just the start of the process, a form of designer life: parents deciding that only a certain type of perfectly normal child will be allowed to be born.

Latest research is turning all these dreams into reality, using technology developed originally for use in animals.

The simplest way to a designer child is human cloning: taking a cell from an adult and combining it with a human egg to make an identikit clone of the adult.

This is the ultimate pedigree child with guaranteed genes.

What is more, we know from tracking the life of the adult exactly what the designer baby will look like at the age of two, ten, twenty, thirty and so on.

We know what diseases the designer person will be likely to catch. We know a lot about the personality profile of the growing child.

Studies of identical twins reared apart show us just how much more than we think is influenced by our genes. Of course all identical twins are individuals who make their own choices, but our [genetic](#)

makeup is extremely important in who we turn out to be. There are technical hurdles still perhaps to be overcome before human cloning will be a reality but the race is on.

Another more difficult way to make designer people, or a super race, is to take sperm or eggs, or cells in a developing embryo, and add new genes to them.

This is called germ cell alteration. Although this sounds very difficult, designer animals are made routinely using genetic engineering.

Indeed, official government statistics show that almost a million designer animals were made in UK laboratories alone, many as transgenic animals, combinations of more than one species - say a cat and a dog, or a mouse, fish and human (yes they have been made). Usually only a tiny amount of [genetic](#) material is added, enough to influence development.

A third way is to alter cells after birth. This is called somatic cell alteration. Here, the effects will die out when the person dies, and will not be passed onto a second generation of designer babies.

This is unlike the germ cell alterations which will always be passed into every generation afterwards - perhaps for thousands of years with totally unknown consequences for the future of the human race.

The technology for all these things already exists - with the exception of a practical safe method of human cloning. And the costs of many of these techniques is falling dramatically.

For example, it is now possible to detect whether an embryo made by IVF is male or female for \$5 in a few minutes, by analysing gene fragments in the fluid surrounding the developing embryo. The same technique can in theory detect a very wide range of genetic conditions or characteristics, without damaging a single embryonic cell.

This was science fiction just a few years ago, when the only way to profile the genes of an embryo was to detach a cell from the embryo and analyse it before implantation.

The lesson of history is that whatever can be done, will be done somewhere, sometime by someone and designer people will no doubt be made.

Expect these technologies to be used first by very wealthy people, media celebrities and so on, for reasons of personal preference, and also to prevent serious medical conditions.

When designer babies are born they will deserve the same love, care and emotional understanding as any other children - perhaps they will need a lot more.

However, we urgently need global agreement outlawing selection of children on the basis of sex, intelligence potential or any other characteristic in the normal range.

We also need a similar ban on preventing implantation / birth of embryos / babies which would otherwise be born with relatively non-serious or curable medical conditions, or with risks of developing such conditions.

Do we really want to live in a world where only "perfect" children are tolerated? And who decides what "perfect" is?

I'm not just talking about physical appearance or intelligence or musical talent, but also about types of personality, risks of mental health issues.

There are all kinds of unintended consequences of this. For example, we know that great genius can carry with it all kinds of mental health risks.

Prevent births of babies with particular genes which may be linked to an added risk - say - of bipolar disorder, and you might rob tomorrow's world of brilliant artists, musicians, writers, comedians, leaders and so on.

**** "How AI Will Change Your Life - A Futurist's Guide to a Super-Smart World" - Patrick Dixon's latest book on AI is published in September 2024 by Profile Books. □ It contains 38 chapters on the impact of AI across different industries, government and our wider world, including the future impact of AI on genetic engineering and health care.***