Patrick Cusworth

Genetics is the study of inherited characteristics through our genes, genes being the basic unit capable of passing characteristics from one generation to the next. It consists of a specific sequence of DNA occupying a set position on a chromosome. Characteristics that can be passed through our genes can include genetic disease, even if neither parent of a sufferer exhibits any specific symptoms of the condition. For example, if both parents carry the epilepsy gene, a resulting child would have a one in four chance of having epilepsy, and a two in four (50%) chance of being a carrier of the epilepsy gene.

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Where genetic testing has gone wrong

For many years, Sardinian families had known of the curse of Thalassaemia (a blood disorder which interferes with the transportation of oxygen). When genetic testing became available that could distinguish the carriers from non-carriers, the well-meaning genetic counsellors explained to the locals that marriages between carriers should be prevented. In response to this, the elders established a new social caste system which led to discrimination against carriers. The non-carriers came to be viewed as a social elite.

The Human Genome Project

When the £2 billion international Human Genome Project, intended to 'map all the genes in the three billion letter genetic code in a typical human cell', completed its research, scientists were astounded to discover that human beings actually possess far fewer genes than were first thought. However, some of the propositions that were made upon its completion also included the possibility for the development of thousands of genetic tests – leaving open the possibility of complex genetic caste systems growing up in our societies. This predictive power must be carefully deployed and sensitively monitored if we are to reap the benefits without visiting new ills upon ourselves[1]

Where are we going?

The film 'Gattaca' presents us with a stark warning of the potential consequences of moving at an unabated pace with such new technologies. Genetic discrimination, such as determination in terms of who a person can marry, what they can do for a living, insurance policy details, could all be possible. In regards to babies, prenatal diagnosis and pre-implantation genetic diagnosis of embryos[2] may also become the norm, and giving birth to a child considered less than ‘perfect’ may become socially unacceptable. An influential British academic has recently published a book which puts the case for why we should make 'better people' using these techniques[3]. At a time when we are reviewing our laws on embryo experimentation, the prevalence of such ideas are a cause for grave concern. The Human Genome Project has put us more intimately in touch with our own reality than we have ever been, but it also makes us more responsible than ever for our human heritage. The great struggle between the scientific eugenicists and those committed to the dignity of humankind lies before us. It remains to be seen if we are worthy of that challenge[4].

References

1 Briefing on the Human Genome Project, LIFE Briefing sheet, November 1995.
2 See briefing sheet on IVF.
3 See Harris, J. 2007. Enhancing evolution: the ethical case for making better people, Princeton University Press: USA
4 Ibid. footnote 1.