

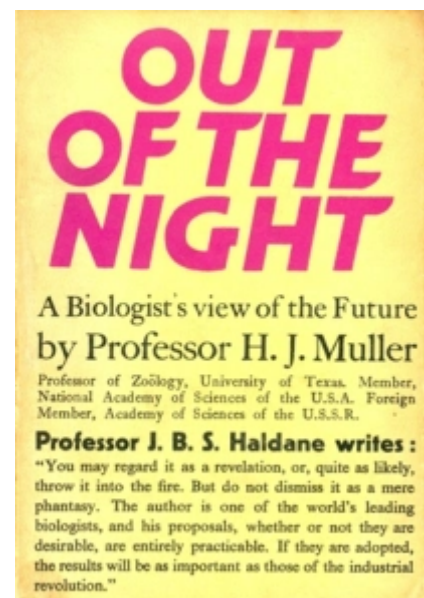
Hermann Muller is one of my favourite scientists ever. Among other things he used the first balancer chromosomes to do genetic analysis, discovered X-rays induced mutations, and developed the concept of genetic load. Muller was also tireless and systematic, spending countless hours crossing flies with care and patience. No wonder he was the sole recipient of the Nobel prize in Physiology or Medicine in 1946 for his work in mutagenesis.

However, Muller's name is strongly associated with 'eugenics', a word that is today a synonym of racism, or even Nazism. Because of that, I have been afraid of reading some of his writings that may jeopardize my idealization of Muller. A few months ago I changed my mind and decide to read more about his eugenics views. It took me a while, but I finally got a copy of his "Out of the Night: A Biologist's view of the future", his personal view on how science and eugenics will change the future. To my surprise, Muller was very critical with most eugenic programs, and fought against selective sterilization or similar practices. Muller, as a geneticist, was well aware that selective elimination of weak phenotypes had only a little impact to remove recessive deleterious alleles from the population. Noteworthy, Muller even sent his book to Joseph Stalin while living in the USSR, together with a lengthy letter, hoping that he would embrace Mendelism and his eugenic program. Muller soon heard that Stalin was "displeased by it, and has ordered an attack prepared against it".

But "Out of the Nigh...", more than a eugenics program, has become a description on how society have changed in the last century. Muller's proposals have become a list of predictions, and most (if not all of them) have become a reality. Here's the list of his 'proposals', and their current status.

1) Universal dissemination of knowledge about the means of birth control. Abortion must also be legalized and regulated. Abortion is indeed legal in most European, Asian and North American countries. In these countries abortion is regulated and it is permitted under request or, in countries with a more restrictive law, when there is a risk for the mother or in cases of rape.

2) Better systems of pain relief during labour. In the UK (the case I know the best) there are various options for pain relieve during labour: Entonox, pethidine and epidural anaesthesia. In the US, more than 50% of women give birth with Epidura anaesthesia.



Cover of Hermann Muller's "Out of the night", 1936, Victor Gollancz Ltd, London.

3) Better ways to deal with illnesses affecting children in their first six months.

Nowadays many congenital disorders are routinely detected before birth thanks to ultrasound scans and maternal blood screens. In most North American and European countries, newborn babies have their blood test for several genetic and metabolic disorders (heel prick). In the near future, whole genome sequencing of a foetus would be possible by extracting only the mothers blood.

4) Develop public organization for food preparation, laundrering and other services for infants and young children. I think Muller was thinking on a huge collective nursery for all children in a community, or something like that. In any case, childcare is now an important part of our society and present day nurseries may somewhat fit Muller's idealization.

5) Inspire “women of the highest type of intelligence” to be mothers. Maternity leaves permit working women to have a career break to have children without losing their jobs. I don't agree at all with this obsession for “intelligent parents to have intelligent children”, but benefits and leaves do help successful woman to become mothers.

I do not aim to state whether Muller was right or not, or whether abortion or benefits are right or wrong. What I want to point out is that, the eugenics program described by Muller, as such, has become a reality. One should take into account that what we call now eugenics, it was a different thing decades ago. Actually, some journals with the ‘eugenics’ word in their title were actually journals of genetics such as “Eugenics Review” (which published papers on human genetics) or “Annals of Eugenics” (which changed its name to “Annals of Human Genetics” in 1954). William Provine has stated that ‘Eugenics has merely been renamed genetic counselling’. In this sense, Muller's “Out of the night” may have become the first eugenics/genetic-counselling manifesto that has been fully fulfilled.