

The Guardian view on editing human DNA: a bad idea, and badly executed
The Guardian, Editorial, Tue 4 Dec 2018 (abridged)

The Crispr/Cas9 technique of editing DNA is, by the standards of earlier methods, astonishingly quick and easy. It is not entirely reliable or accurate, but it places enormous potential power in the hands of ordinary scientists. It is also internationally widespread, and beyond the control of any single nation now. So reckless and unethical experiments were only to be expected; nonetheless, last week's announcement by a Chinese scientist that he had altered the germlines of twin girls to modify a gene involved in the transmission of HIV was a profoundly worrying one, for several reasons.

The most important is that there is no medical reason for what he did. There is a vitally important difference between editing the genes which are present in a body and those which are present in sperm or eggs. With the first kind of modifications, the effects die with the bearer. With the second, they are passed, like mutations, down into future generations. Of course such mutations might in theory be entirely beneficial. But scientists don't at the moment have nearly enough knowledge to judge whether this is true or even probable in practice. They'd need to know at least how any particular modified gene will perform over a lifetime, and, ideally, what effects it might have in subsequent generations.

For those few gene variations where the evidence is entirely clearcut, there is almost always the possibility of testing embryos produced by IVF and implanting those which lack the fatal defect. That is already widely practiced in the rich world by couples at risk, and is not very controversial. Although disability activists are concerned about the risk that some conditions like Down's syndrome might be eliminated entirely by such means, there are other, much rarer, and more cruel conditions which make the short lives of affected babies unbearable both for them and for anyone who loves them.

But there is no need for Crispr manipulations to achieve this. What Dr He attempted was far more ambitious. He took embryos which were – so far as we know – entirely normal, but whose fathers were suffering from HIV, and altered one of their genes with partial and patchy success into a form which seems to be responsible for the immunity that some Europeans appear to have to the virus.

These babies were not otherwise in any greater danger of catching the virus than anyone else. Their mothers are not infected. Although he spoke at his presentation of the prospect of eliminating the disease from Africa by these means, this is a fantasy. Very much cheaper and more effective methods of combating the disease are already available. The obstacles to their deployment are war, poverty and corruption, not lack of science.

It's very difficult to understand this story as anything other than a piece of scientific hubris, more driven by the desire to experiment than by real compassion. But although it has been roundly condemned by genuinely distinguished scientists such as Dr Francis Collins, it is unlikely to be the last such experiment. Gene therapy used once to be denounced as "playing God". That is no reason to abandon it. But if humans are to play God, they need to behave in a morally better way than unaided nature does. [...]