



EAST LONDON SCHOOL DAY OF DEBATE

“THIS HOUSE BELIEVES THAT HOW INTELLIGENT WE ARE IS DUE TO OUR GENES”

BY ROB LYONS

We know from school and from life in general that some people seem to be cleverer than other people. Some scientists think that intelligence is largely inherited. In other words, how intelligent we are depends on the genes that are passed on to us by our mothers and fathers. But what makes people so different?

Genes

Genes are sections of a very long molecule called DNA that is contained in every cell in our bodies. There are lots of genes contained within our DNA. When we are conceived, we get half of the DNA from our fathers and half from our mothers. This combination of DNA from two different people helps to make us unique, unless we are one of identical twins.

Genes provide the instructions for all the different cells in our bodies so that they know what job they need to do and how they will develop. Some of the things that genes determine are common to (nearly) all of us: that we have two arms and two legs, and so on. But they also help to decide the differences between us: whether we are male or female, what colour our hair and eyes will be, and so on.

What is intelligence?

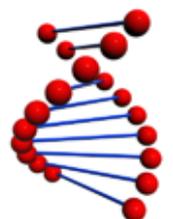
There are lots of ways in which people could be 'intelligent'. Some people are really good at picking up languages, some are good at maths, some are great at reading. But someone might be good at one kind of thing, but not good at others. Some writers think that if you're good at understanding other people's feelings then you are 'emotionally intelligent'. Footballers are described as 'intelligent' when they are good at deciding when to pass the ball and when to shoot.

When we talk about intelligence in general, it is usually based on the results from IQ tests. These try to test lots of different kinds of intelligence at the same time. Can you apply reasoning to whether shapes are the same, which words have something in common, how to solve maths problems? By adding up the answers to lots of different kinds of questions and comparing our answers to everyone else's, we get a figure for our 'IQ'. Some people think this isn't a very good way of deciding intelligence, but lots of researchers think it is quite a good way of assessing our abilities.

Do genes determine how intelligent we are?

The way that scientists try to answer this question is by giving IQ tests to groups of people who are in many ways similar. For example, one way might be to give that same test to sets of identical twins (whose genes are the same) and non-identical twins (whose genes are similar to each other, but different in the way that brothers and sisters are usually different). This kind of research has come to a variety of different estimates of how much intelligence is passed on through our genes – how 'heritable' it is. Some studies suggest that three-quarters of the variation in intelligence among people is down to genes, some say it is only half.

But that assumes that people grow up in the same environment. Children growing up in neglect will not develop as much intelligence as those who have schools that teach them well and parents who encourage them to read and learn. So how much do genes matter? Are the smart kids in class the lucky ones with good genes or does your environment matter more?





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